

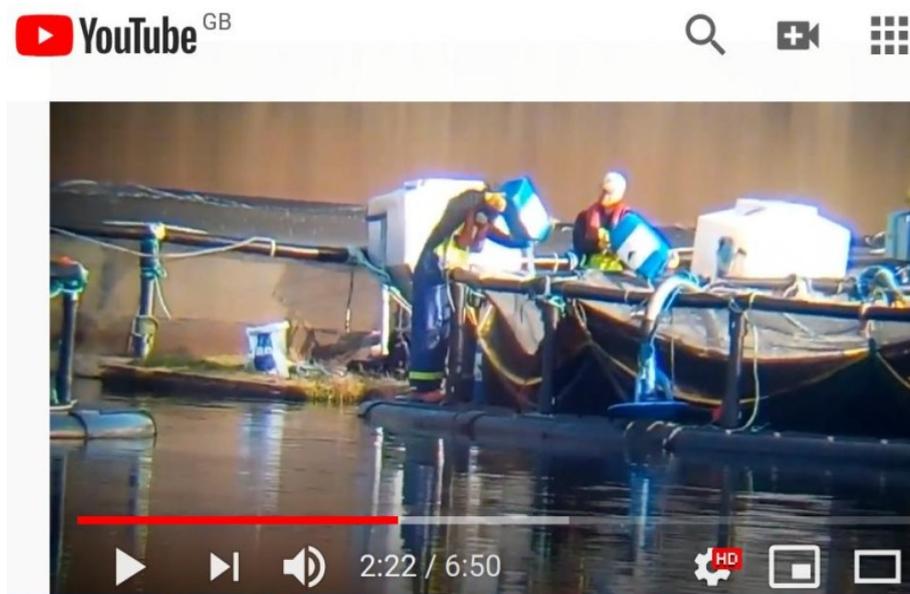
Scottish Salmon Watch, 24 May 2020

[REVEALED: Carcinogenic Chemical Formaldehyde Flooding Scottish Lochs](#)



- FOI reveals over 22 tonnes of carcinogenic chemical used in freshwater lochs including Ness, Lochy, Tralaig, Arkaig, Shin, Damph, Avich, Fresa & Garry in 2019
 - Video footage reveals use of Formaldehyde in Loch Tralaig
 - Mowi named as the biggest user of Formaldehyde followed by Kames
- Aquaculture Stewardship Council set to certify Mowi's salmon farms in Loch Lochy, Loch Arkaig & Glenfinnan (Loch Shiel) despite Formaldehyde use
- Campaigners call for ban on Formaldehyde & public register of toxic chemicals

New data [obtained via Freedom of Information from the Scottish Environment Protection Agency \(SEPA\)](#) reveals that 22.4 tonnes of the [highly toxic poison](#) and [carcinogenic chemical Formaldehyde \(Formalin\)](#) was officially reported as used by 12 salmon farms representing seven companies between April and December 2019. Campaigners are calling for a ban on discharges of cancer-causing chemicals and a public register of all toxic chemicals used on salmon farms in Scotland - including the use of the [neonicotinoid Imidacloprid \(banned for use in terrestrial farming in 2018\)](#) which Mowi plan to use in a field trial in Loch Ailort.



F0191629 ([published online by SEPA on 12 May 2020](#)) reveals that the number of salmon farms officially reporting the use of Formaldehyde during the last nine months of 2019 is 12 (up from four in 2017 and 2018) via 29 monthly reports submitted to SEPA. The number of companies now officially reporting the use of Formaldehyde ([used in solution as Formalin](#)) is seven (Mowi, Scottish Sea Farms, Kames, Cooke Aquaculture, The Scottish Salmon

Company, Migdale Smolts and Torridon Smolts) - up from only one company (Mowi) in 2017 and 2018. Freshwater lochs across Scotland subject to discharges of this embalming fluid - [used by Damien Hirst to pickle art exhibits such as dead sheep, cows and sharks](#) - include Arkaig, Avich, Damp, Fresa, Garry, Ness, Shiel, Shin and Tralaig (where [video footage of farm workers pouring Formalin into the loch has been captured](#)) [1].



Day 20 of Kames Fish farm pouring Formalin 40 into Loch Tralaig

Here's the top twenty biggest reported uses of Formaldehyde in 2019 (April to December) - the top ten is monopolised by [Norwegian salmon farming giant Mowi](#) who [BBC Panorama reported in May 2019](#) was "one of a number of firms under investigation for possible misreporting of chemical use":

Site Name	Operator	Licence	Month	Formaldehyde (active ingredient in grams)
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Sep-19	3525000
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Oct-19	2606000
Invermallie, Loch Arkaig	Mowi Scotland Ltd	CAR/L/1002071	Apr-19	2195625
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Dec-19	1743750
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Aug-19	1612500
Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Oct-19	1294000
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Jul-19	1087500
Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Nov-19	1057500
Invermallie, Loch Arkaig	Mowi Scotland Ltd	CAR/L/1002071	Nov-19	1012500
Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Oct-19	825000
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Nov-19	624000
Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Sep-19	618700
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Dec-19	526000
Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Dec-19	450000
Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Nov-19	393750
Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Sep-19	337500
Loch Garry	Mowi Scotland Ltd	CAR/L/1008962	Aug-19	312375
Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Nov-19	281250
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Oct-19	253000
Corrie Kinloch, Loch Shin	Migdale Smolt Ltd	CAR/L/1003918	Nov-19	247500

Mowi is [owned/controlled](#) by [Norway's richest man John Fredriksen](#) - [ranked 20th on The Sunday Times 2020 Rich List with £6.63 billion \(\\$10 billion according to Forbes\)](#).

The locations with the biggest use of Formaldehyde were Loch Lochy (11 tonnes); Loch Arkaig (3.2 tonnes); Glenfinnan on Loch Shiel (2.8 tonnes); Loch Ness (2.2 tonnes) - all Mowi; and Loch Tralaig (1.4 tonnes) - Kames. [Norwegian-owned giant Mowi \(who changed their name from Marine Harvest in 2019 due to negative consumer perception\)](#) accounted for the vast majority of use with 19.6 tonnes (88%) followed by [Kames](#) with 2.2 tonnes.

Last year, [data disclosed by SEPA](#) for the use of Formaldehyde reported that only one company (Marine Harvest, [who became Mowi on 1 January 2019](#)) had used 26.4 tonnes in 2017 and 24.3 tonnes in 2018 at only four salmon farms in 30 monthly reports to SEPA (although 184 fish farms in Scotland are licensed to use it). Here's the top 10 biggest uses in 2017 and 2018:

Site Name	Operator	Licence	Month	Formaldehyde (active ingredient in grams)
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Mar-18	4443750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Aug-17	4200000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Feb-18	3712500
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Oct-17	3226875
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jan-18	3093750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Sep-17	2831250
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Dec-17	2525000
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Feb-18	2456250
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Jan-18	2325000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jul-18	2231250

Read more via [EXPOSED: Scottish Salmon's Cascading Use of Cancer-Causing Chemical](#)

Last week (13 May) Scottish Salmon Watch [questioned the accuracy of the data citing other uses of Formaldehyde \(Formalin\) by salmon farms not officially reported by SEPA \[2\]](#).

Reported uses of Formalin via the [Scottish Government's Fish Health Inspectorate 'Case Information'](#) included an "accidental overdose" at Marine Harvest's Glenfinnan salmon farm on Loch Shiel in October 2017 "due to human error" leading to 1,343 dead fish and the use of Formalin at Cooke Aquaculture's salmon farm at Sallachy in Sutherland in 2017 (a site [certified by the Soil Association as "organic"](#)). Formalin was also reportedly used at [The Scottish Salmon Company's Russel Burn Hatchery](#) in July 2017 following fungus problems causing over 40,000 mortalities [3].

Here's a list of some recent uses of Formalin as reported by the [Scottish Government's Fish Health Inspectorate 'Case Information'](#) (not all cases were reported by SEPA and note that not all salmon farms are inspected every year - and prior to 2019 Mowi was Marine Harvest):

- February 2020: The Scottish Salmon Company's Appleburn Hatchery in Wester Ross
- February 2020: Mowi's salmon farm in Loch Arkaig in Highland
- January 2020: Cooke Aquaculture's Loch Garasdale salmon farm in Argyll
- January 2020: Landcatch's Ormsary Smolt Unit in Argyll
- December 2019: Landcatch's Clachbreac salmon farm in Argyll
- November 2019: Scottish Sea Farms Barcaldine Smolt Unit on Loch Creran in Argyll

October 2019: Kames Fish Farming salmon farm in Loch Avich in Argyll
September 2019: FAI Aquaculture's FAI Aultbea site in Wester Ross
July 2019: Landcatch's Ormsary Smolt Unit in Argyll
June 2019: Torridon Smolts in Loch Damph in Wester Ross
February 2019 - Loch Duart's Duartmore hatchery in Sutherland
February 2019 - Landcatch's Ormsary Smolt Unit in Argyll
February 2019 - Kames Fish Farming salmon farm in Loch Tralaig in Argyll
January 2019 - Cooke Aquaculture's Ardtaraig Hatchery on Loch Striven in Argyll
January 2019 - Mowi's Inchmore Hatchery in Glenmoriston
November 2018 - Cooke Aquaculture's Yetts O'Muckart salmon farm in Clackmannanshire
November 2018 - Hebridean Smolts' Clachan Hatchery in Loch Carnan in South Uist
October 2018 - Landcatch's Ormsary Smolt Unit in Argyll
October 2018 - Scottish Sea Farms' Knock hatchery on the Isle of Mull
October 2018 - Marine Harvest's Laddie Wood salmon farm in Loch Garry in Lochaber
October 2018 - The Scottish Salmon Company's Kinlochmoidart Hatchery in Highland
August 2018 - Marine Harvest's Glenfinnan salmon farm in Loch Shiel in Lochaber
July 2018 - Marine Harvest's Loch Lochy salmon farm in Lochaber
July 2018 - Marine Harvest's Lochailort Recirculation Hatchery in Lochaber
April 2018 - FAI Aquaculture's Aultbea fish farm in Wester Ross
March 2018 - The Scottish Salmon Company's Langass Hatchery in North Uist
February 2018 - Cooke Aquaculture's Furnace Hatchery on Loch Fyne
December 2017 - Landcatch's Ormsary Smolt Unit in Argyll
November 2017 - Scottish Sea Farms' salmon farm in Loch Ba on the Isle of Mull
November 2017 - Marine Harvest's salmon farm in Loch Lochy in Lochaber
October 2017 - Marine Harvest's Loch Ness salmon farm in Highland
October 2017 - Cooke Aquaculture's "organic" salmon farm at Sallachy in Sutherland
October 2017 - Cooke Aquaculture's Cliff salmon farm in Shetland
October 2017 - Scottish Sea Farms' Loch Frisa salmon farm on the Isle of Mull
October 2017 - Scottish Sea Farms' Knock salmon farm on the Isle of Mull
October 2017 - Marine Harvest's Glenfinnan salmon farm in Loch Shiel in Lochaber
October 2017 - Marine Harvest's salmon farm in Loch Arkaig in Highland
July 2017 - The Scottish Salmon Company's Russel Burn Hatchery on Loch Kishorn

Scottish Salmon Watch counts the following 19 sites which reported Formalin use to the Scottish Government's Fish Health Inspectorate but not to SEPA (i.e. in breach of their reporting requirements):

Cooke Aquaculture's Ardtaraig Hatchery on Loch Striven in Argyll
Cooke Aquaculture's Cliff salmon farm in Shetland
Cooke Aquaculture's Furnace Hatchery on Loch Fyne
Cooke Aquaculture's Loch Garasdale salmon farm in Argyll
Cooke Aquaculture's Yetts O'Muckart salmon farm in Clackmannanshire
FAI Aquaculture's FAI Aultbea salmon farm in Wester Ross
Hebridean Smolts' Clachan Hatchery in Loch Carnan in South Uist
Landcatch's Clachbreac salmon farm in Argyll
Landcatch's Ormsary Smolt Unit in Argyll
Loch Duart's Duartmore hatchery in Sutherland
Mowi's Inchmore Hatchery in Glenmoriston
Mowi's Lochailort Recirculation Hatchery in Lochaber
Scottish Sea Farms Barcaldine Smolt Unit on Loch Creran in Argyll

Scottish Sea Farms' salmon farm in Loch Ba on the Isle of Mull
 Scottish Sea Farms' Knock salmon farm on the Isle of Mull
 The Scottish Salmon Company's Appleburn Hatchery in Wester Ross
 The Scottish Salmon Company's Kinlochmoidart Hatchery in Highland
 The Scottish Salmon Company's Langass Hatchery in North Uist
 The Scottish Salmon Company's Russel Burn Hatchery on Loch Kishorn

Documents [disclosed by SEPA via FO191629 on 12 May 2020](#) included a statement to The Ferret in June 2019 (who [subsequently published an article on the issue](#)) that "operators are required to record each individual use of formaldehyde" and the claim that "these records are audited as part of SEPA's routine compliance inspections":

The Ferret response - 28 June 2019

A spokesperson from SEPA, said:

"Every day SEPA works to protect and enhance Scotland's environment.

"Uncontrolled releases of formaldehyde have the potential to cause significant harm to the environment. It is therefore important to ensure that formaldehyde is stored, handled and used appropriately to minimise the risk of any uncontrolled releases.

"The use of formaldehyde is authorised at the Russel Burn hatchery by SEPA and the operators are required to record each individual use of formaldehyde. These records are audited as part of SEPA's routine compliance inspections.

"We take any allegations of environmental breaches very seriously and as an evidenced based organisation we would always take action to investigate where information comes to light. We would therefore encourage anyone with information of non-compliance to contact SEPA, in confidence, via the Pollution Hotline 0800 80 70 60."

[FO191629 disclosed by SEPA on 12 May 2020](#) also included the statement in July 2019 to The Sunday Times (who [subsequently published an article on the issue](#)) that monthly records of chemical use are "submitted as part of the operators data returns":

Sunday times response - 19 July 2019

THE SUNDAY TIMES : LOCH ARKAIG

A spokesperson from SEPA, said:

"Every day SEPA works to protect and enhance Scotland's environment.

"Formaldehyde is authorised under strict limits at Loch Arkaig. The use of chemicals at the site are controlled by the site licence. The records below outline monthly use at the site, as submitted as part of the operators data returns. Chemical records are audited as part of SEPA's routine compliance inspections and the site's current compliance is rated as 'excellent'."

Car license CAR/L/1002071. Data returns highlight use as outlined below:

Month and year	Formaldehyde (active ingredient in grams) total	
May	2017	-
June	2017	-
July	2017	-
Aug	2017	356,250
Sep	2017	1,106,250
Oct	2017	3,226,875
Nov	2017	2,212,500
Dec	2017	56,250
Jan	2018	-
Feb	2018	-
Mar	2018	-
Apr	2018	-
May	2018	-

June	2018	-
July	2018	-
Aug	2018	-
Sep	2018	18,780
Oct	2018	206,250
Nov	2018	393,750
Dec	2018	1,258,125
Jan	2019	675,000
Feb	2019	1,350,000
Mar	2019	2,291,250
Apr	2019	2,295,625
May	2019	-

"Scottish Salmon Watch finds it perplexing that only Mowi/Marine Harvest officially reported the use of Formaldehyde (Formalin) to SEPA prior to August 2019 (as detailed via both [F0190275](#) and [F0191629](#)) and finds it difficult to believe that Mowi was the only company using the cancer-causing chemical," [wrote Scottish Salmon Watch in a FOI review letter to SEPA dated 13 May 2020](#). "Indeed, Scottish Salmon Watch cannot help but speculate that our [press release dated 26 June 2019](#) triggered the reporting of Formaldehyde (Formalin) use by other companies (i.e. their non-reporting became an issue which they were prompted to remedy and may have back-dated or corrected monthly operator data returns)."

Scottish Salmon this week (21 May 2020) [filed a FOI request with the Scottish Government and Veterinary Medicines Directorate](#) in an attempt to plug the gaps in the data.

"Something decidedly fishy is going on with the use of this carcinogen on salmon farms," said Don Staniford, [Director of Scottish Salmon Watch](#). "Officially reported use of Formaldehyde (Formalin) is surely just the tip of the iceberg with media coverage last Summer prompting a flurry of new reports. Alarming, [during the Coronavirus lockdown](#) rules have been relaxed so [even more toxic chemicals may be used by salmon farms across Scotland](#)."

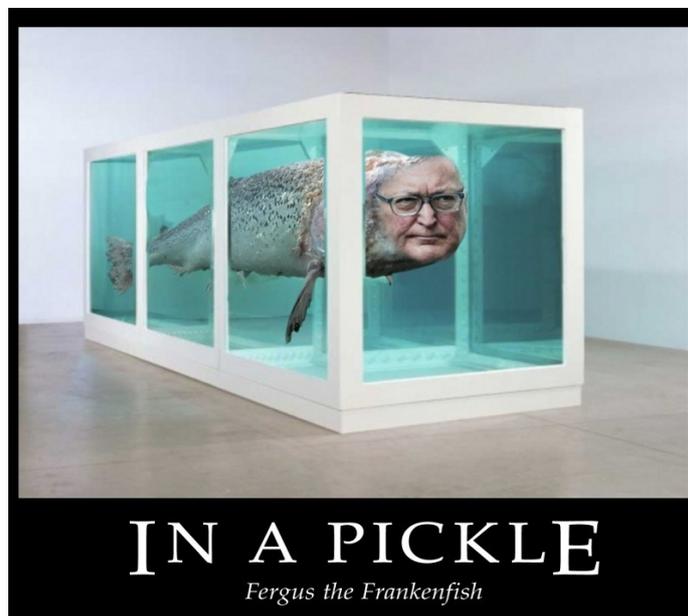


"Donald Trump has been lambasted for suggesting the use of Clorox disinfectant to cure Covid-19 yet here we have a dirty dozen salmon farms across Scotland using over twenty tonnes of Damien Hirst's favourite embalming fluid. If the Loch Ness monster existed they would probably be pickled along with Damien Hirst's dead sharks, sheep and cows."



The Shocking Death & Welfare Nightmare of Chemically Embalmed Salmon

"Instead of blindly permitting salmon farming companies like Mowi and Kames to discharge cancer-causing chemicals in pristine lochs, SEPA should revoke all 184 licences to use Formaldehyde (Formalin)," continued Staniford (author of '[Silent Spring of the Sea](#)'). "At the very least there must be a public register of all toxic chemicals - including Imidacloprid, Hydrogen Peroxide, antibiotics such as Oxytetracycline as well as Formaldehyde (Formalin) - not to mention public consultation. SEPA and the Scottish Government must both come clean on the use of Formaldehyde (Formalin) on salmon farms. Speaking personally, I would not wish chemically embalmed farmed salmon on my worst enemy - not even Fergus Ewing. Consumers should boycott all Scottish salmon - even farmed fish certified via the Aquaculture Stewardship Council, RSPCA and Soil Association."



The Aquaculture Stewardship Council is [currently assessing Mowi's Loch Lochy, Glenfinnan \(Loch Shiel\) and Loch Arkaig salmon farms with a view to certification](#) - with no objection to the use of the carcinogenic chemical Formaldehyde (Formalin) [4].



What we do What you can do Our logo About us News Resources

Company Name	Certificate Number	Farm	Country/Territory	Species	Status	Certified Until	Public Consultation Until
Mowi Scotland		Glenfinnan	United Kingdom of Great Britain and Northern Ireland, The	Salmo salar (Atlantic salmon)	In Assessment		
Mowi Scotland		Lochy	United Kingdom of Great Britain and Northern Ireland, The	Salmo salar (Atlantic salmon)	In Assessment		
Mowi Scotland		Arkaig	United Kingdom of Great Britain and Northern Ireland, The	Salmo salar (Atlantic salmon)	In Assessment		

SEPA's FOI disclosure on 12 May 2020 ([F0191629](#)) includes an undated 'SEPA Environmental Event Report' which stems from a complaint filed on 2 July 2019 regarding the operations of Kames in Loch Tralaig:

SEPA Environmental Event Report

Action Description

[REDACTED] for the past 3 months water levels have been extremely low. [REDACTED] says the loch has been 'dead' for the last two months, the water is stinking, and [REDACTED] hasn't seen any of the wildlife [REDACTED] normally sees regularly (Ospreys, eagles, otters, fish, smolt). [REDACTED]

[REDACTED] concerned that the deterioration may have been caused either by the fish farm increasing its capacity by 300% or by the hydro scheme abstracting too much water.

[REDACTED] aware SEPA monitors water quality monthly, but says the samples are taken at a freshwater inlet. [REDACTED] thinks sampling should be done at the fish farm instead.

2/7/19 14:30 [REDACTED] called complainant to discuss

10/7/2019 [REDACTED] visits Kames for Loch Tralaig record inspection.

13.08.2017 [REDACTED] calls looking for update. [REDACTED] returns call. [REDACTED] very angry and frustrated re perceived impact on loch and lack of action from SEPA. [REDACTED] makes lots of allegations re poor mgmt from fish farm and severe impact on loch, saying [REDACTED] would make a complaint about SEPA's action to date. Agreed in end that [REDACTED] would email to lay out situation in its entirety and SEPA would then call [REDACTED] to discuss.

16/09/2019 - [REDACTED] has obtained information from Kames about production and tonnages of food used etc. [REDACTED] prepares a response and sends to complainant which results in further discussion. Complainant reiterates concerns about production rates and records to SEPA, what the fungus disease was and whether or not it is possible it could be affecting native fish stocks. Loch levels in Tralaig have been fluctuating widely of late as SSE is operating reservoir at a lower starting position than normal to offset renewable energy generation from wind to water. This may be impacting on food available in littoral zone but not sure if this could be proven. Complainant concerned over use of same volumes of chemicals in a loch with reduced water levels and wants this to be remodelled. Also has concerns about smell/odours from fish farm and chemical/formalin use at site. SSE has stopped flushing sluice gates at Loch Tralaig about three years ago and this may be resulting in less juveniles making it into the loch to grow to adult size. Not sure how this relates to loch ecology and impact on fish populations and further investigation is likely required.

Waiting for further response from [REDACTED] to obtain further information from Kames/Fish Farm Operator and [REDACTED] to consider what other work could be done, speak with [REDACTED] and get water level data from [REDACTED] as this has still not been forthcoming.

An email dated 5 September 2019 from SEPA's Benedict Tustin disclosed via [F0191629](#) refers to the use of "repeat Formalin treatments" in the 2018-2019 cycle:

From: Tustin, Benedict
Sent: 05 September 2019 10:48
To: [REDACTED]
Subject: 20190905 [REDACTED] - CARL1000233 [REDACTED] RE: Loch Tralaig

Kames Fish Farming has operated a fish farm on the loch since 1978 and although the number of cages in use on the loch has increased this is not indicative of an increase in annual production. The site is licensed for a maximum standing biomass of 7.5 tonnes and an annual production limit of 20 tonnes and company records indicate that the maximum biomass in 2017-18 was 6 tonnes with an annual production of 6.7 tonnes and for 2018-19 this was 6.5 tonnes with an annual production of 7.1 tonnes. The site used 28 tonnes of food between August 2017 and February 2018 and 42.9 tonnes between August 2018 and April 2019. The 2018-19 cycle was 46 days longer than the previous one and an outbreak of fungus resulted in higher mortalities being experienced over this growing cycle which will account for increased feed use and operator activity.

The fungal outbreak required the use of repeat formalin treatments but the maximum amount being used within a 24 hour period of 150 litres is within SEPA authorised limits. Maximum treatment volumes were determined through modelling to ensure that the treatment quantity cannot exceed environmental quality standards. SEPA is currently reviewing the use of treatment medicines/chemicals at both marine and freshwater fish farm sites and this may result in some changes to the types that can be used and in what quantities. No changes are proposed in the interim and the outcome of our review is likely to require further discussions with the Veterinary Medicines Directorate (VMD) and industry. Veterinary surgeons are currently able to prescribe the use of [formaldehyde](#) containing products in aquaculture for the prevention of disease.

SEPA's FOI disclosure on 12 May 2020 ([F0191629](#)) reveals that Kames only reported the use of Formaldehyde five times during 2019 (in September, twice in October, in November and in December 2019):

Site Name	Operator	Licence	Month	Formaldehyde (active ingredient in grams)
Loch Avich Fish Farm	Kames Fish Farming Ltd	CAR/L/1000235	Sep-19	396000
Loch Avich Fish Farm	Kames Fish Farming Ltd	CAR/L/1000235	Oct-19	390000
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Oct-19	253000
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Nov-19	624000
Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Dec-19	526000

Another email refers to "discussions at a national/UK level with the Veterinary Medicines Directorate (VMD) about formalin and other chemicals used in freshwater and marine aquaculture".

From: [REDACTED]
Sent: Wednesday, November 06, 2019 11:50 AM
To: [REDACTED]
Subject: RE: Apologies for .. well you know

[REDACTED]

Following our discussion this morning I have left a message for [REDACTED] of Argyll & Bute Council Environmental Health to contact me.

SEPA has begun investigating the use of formalin at this site including volume and timings although this is not something that we can resolve or conclude immediately.

I have requested additional ecology work and this has to be planned although initial results phytoplankton sampling undertaken this summer did not indicate any impact on loch ecology from the presence/activities of the fish farm. I'm pretty sure I referred to this in my original email to you but I am not able to locate a copy of that correspondence at the moment on our files. I did mistakenly misinterpret their biomass/production figures in that email as we subsequently discussed on the phone.

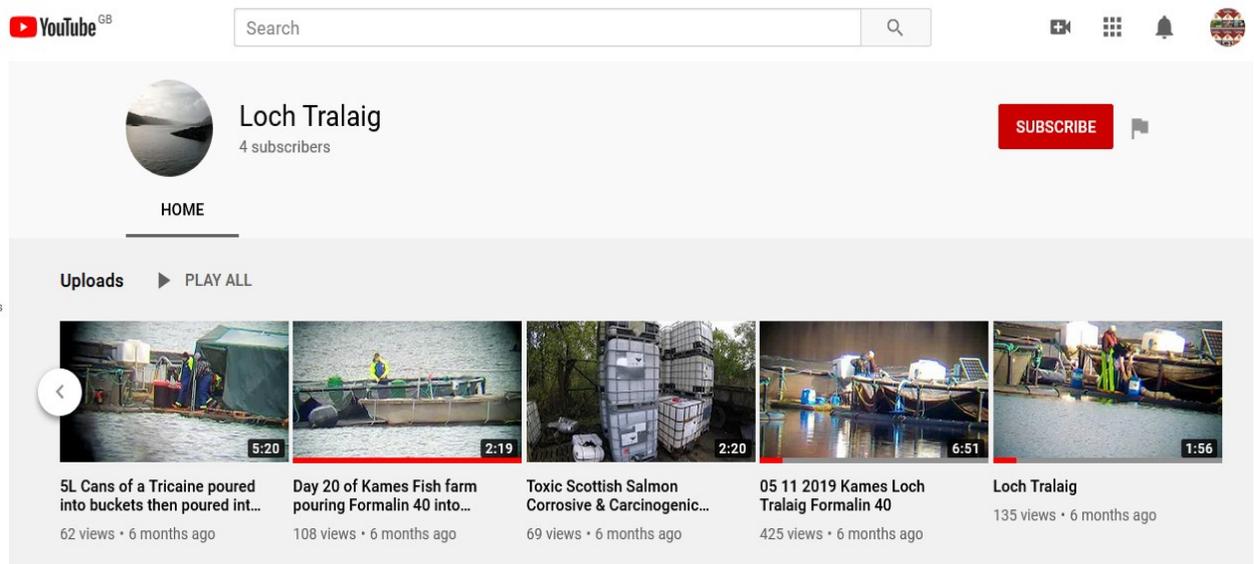
We may need to obtain copies of video footage and a statement from yourself depending on the outcome of our investigations.

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. I am not directly involved in these discussions but I will be made aware of any outcomes that affect day to day use of chemical treatments for fish welfare or disease issues.

In November 2019, Scottish Salmon Watch was [alerted to the use of Formalin by Kames in Loch Tralaig including shocking video footage.](#)



Watch more video footage [online here](#)



The screenshot shows the YouTube channel page for 'Loch Tralaig', which has 4 subscribers. The channel's profile picture is a circular image of a loch. Below the channel name, there is a 'HOME' tab and a 'SUBSCRIBE' button. The 'Uploads' section is active, showing a row of five video thumbnails with their titles and view counts:

- 5:20: 5L Cans of a Tricaine poured into buckets then poured into...
- 2:19: Day 20 of Kames Fish farm pouring Formalin 40 into...
- 2:20: Toxic Scottish Salmon Corrosive & Carcinogenic...
- 6:51: 05 11 2019 Kames Loch Tralaig Formalin 40
- 1:56: Loch Tralaig

In July 2019, Scottish Salmon Watch [published video evidence of historical use of Formalin \(Formaldehyde\) by Mowi in Loch Arkaig.](#)



Read more via [Sunday Times: "Chemical fears at Scots fish farms"](#)

Video footage taken by Scottish Salmon Watch in June 2019 [shows vats of Formaldehyde - marked "corrosive" and "danger" in Spanish stashed outside The Scottish Salmon Company's Russel Burn Hatchery on the shore of Loch Kishorn](#) even though [The Scottish Salmon Company](#) did not report to SEPA the use of any Formaldehyde in 2017 and 2018.



In June 2019, Scottish Salmon Watch [wrote to Scottish Ministers, SEPA and the Veterinary Medicines Directorate calling for an immediate ban on the use of Formaldehyde \(Formalin\) on Scottish fish farms and the publication of data on Formaldehyde use via a public register.](#)



Scottish Ministers: scottish.ministers@gov.scot
 Scottish Environment Protection Agency: terry.ahern@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.

In 2018, Scottish Salmon Watch published other videos showing [caches of toxic chemicals](#) including [vats of Formaldehyde at Kames Fish Farming near Kimelford](#) with a label warning "suspected of causing genetic defects" and "may cause cancer".



Scottish Salmon Watch's FOI request on Formaldehyde (Formalin) stemmed from [an email received in March 2019 from a whistleblower at The Scottish Salmon Company](#):

Sent: 14 March 2019 13:55

To: Don Staniford

Subject: Re: FHI report on Kinlochmoidart Hatchery - ERM, Formalin, antibiotics & morts

Yes be worth asking SNH in Fort William why Sepa is condoning dilute Formic acid being discharged into a sssi river straight from the container. They empty 25litres of formaldehyde straight into each fish tank without following the correct procedure which should be isolating the tank. There is 10 tanks in the flothrough which runs directly into the river! This is results in the dilute formic acid being flushed into the river killing various species in the river!

SEPA's FOI disclosure in April 2019 ([F0190275](#)) included an Excel spreadsheet ([F0190275 ELMS - R](#)) detailing a complaint in November 2018 filed against the use of Formaldehyde by a fish farm in Loch Awe:

ACTION	ACTIVITY	CATCHMENT	GEOGRAPHICAL AUTHORITY	LOCATION DESCRIPTION
<p>30/11/2018 [email address removed] via SCC: [personal details removed] a freshwater Salmon farm rearing smolts, the loch is approx 1 mile long and a few hundred yards wide, over the last 2 weeks the farmers have taken around 20 blue 40l drums of formaldehyde out to the 5 cages to treat the fish,[personal details removed]I am concerned that this chemical could be contaminating our air and water supply, [personal details removed] there is a strong smell blowing over from the cages a mixture of dead fish and formaldehyde, could this be of any threat to us?03/12/2018 [Name removed] - [email address removed] :I am emailing in response to your enquiry last Friday and apologise we have not responded sooner. We regulate fish farms with respect to discharge to the water environment and if you can give us more detail in terms of the fish farm site, we can investigate your complaint. However in terms of the health concerns you have raised, I recommend you contact environmental health at Argyll and Bute council. Their number is 01546 605519 or the main switch line is 01546 605522.23.12.2018 [Name removed] - no update and probably primarily a matter for environmental health. No further SEPA action required.</p>	Waste - Unlicensed	River Awe	Argyll & Bute	Braevallich Fish Farm, Loch Awe, Dalmally

The salmon farming industry uses Formaldehyde via a Formalin solution as a [disinfectant to guard against parasites and diseases although there are fish welfare and environmental concerns as well as human health impacts due to its carcinogenicity \[5\]](#). Formaldehyde is [used in mortuaries to embalm corpses](#) and has been [famously used by artist Damien Hirst to pickle dead animals such as cows, lambs and sharks](#).



In 2013, [the Global Alliance Against Industrial Aquaculture revealed via FOI documents disclosed by the Scottish Government](#) that Scottish farmed salmon was [illegally doused with the carcinogenic chemical Formalin in a Special Area of Conservation and National Scenic Area on the Isle of Lewis in the Outer Hebrides in 2011](#).

1,400 Litres of Carcinogenic Chemical Discharged into Loch Roag:

The 'Discharge Vessel Log of Operations' included fourteen discharges of 100 litres of Formalin from the Viktoria Viking wellboat into Loch Roag between 6 and 8 November 2011:

DISCHARGE VESSEL LOG OF OPERATIONS*

MARINE (SCOTLAND) ACT 2010

MARINE SCOTLAND, MARINE LABORATORY, ABERDEEN

DIS

Discharge Vessel: Viktoria Viking Log Sheet Page Number: 1
 Discharge Operation: Fish Treatment – Wellboat Marine Licence Number: 04339/11/0
 Discharge Site: Offshore Loch Roag Farm of Operation: Miavaig

Date	Quantity of Chemical discharged (ml or grams)	Chemical(s) or agent(s) discharged	Discharge operation			
			Time and position: Start	Weather, sea state and tidal set	Time and position: Completion	Rate/ duration ^a discharge
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
07.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild, cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild/cold, clear and cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild/cold, clear and cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild/cold, clear and cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.294N 06° 57.680W	Mild/cold, clear and cloudy	Within the drop zone	10 minutes
Total		1000 Litres				

MARINE (SCOTLAND) ACT 2010

MARINE SCOTLAND, MARINE LABORATORY, ABERDEEN

DIS

Discharge Vessel: Viktoria Viking Log Sheet Page Number: 2
 Discharge Operation: Fish Treatment – Wellboat Marine Licence Number: 04339/11/0
 Discharge Site: Offshore Loch Roag Farm of Operation: Miavaig

Date	Quantity of Chemical discharged (ml or grams)	Chemical(s) or agent(s) discharged	Discharge operation			
			Time and position: Start	Weather, sea state and tidal set	Time and position: Completion	Rate/ duration ^a discharge
08.11.11	100 litres	Formalin 38%	58° 18.500N 06° 51.900W	Mild, cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.500N 06° 51.900W	Mild, cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.500N 06° 51.900W	Mild, cloudy	Within the drop zone	10 minutes
08.11.11	100 litres	Formalin 38%	58° 18.500N 06° 51.900W	Mild, cloudy	Within the drop zone	10 minutes
Total		400 Litres				

GAAIA's report - "[Formalin - Scottish Salmon's Toxic Solution](#)" - included:

In December 2011, three weeks AFTER the use of Formalin in Loch Roag, the UK's Veterinary Medicines Directorate advised the Scottish Government that "Formalin is not an authorised veterinary medicinal product in the UK" and that "as Formalin is not an authorised product then we have no information on its fate or effects in the environment and no 'position' regarding its use from an environmental perspective."

From: Mills, Jennifer [j.mills@vmd.defra.gsi.gov.uk]
Sent: 01 December 2011 15:57
To: Bland M (Michael) (MARLAB)
Cc: Shelley, Lorna; Reynolds, Lea
Subject: FW: Use of formalin to treat Atlantic salmon suffering from Amoebic Gill Disease

Dear Mike

Thank you for your query which has been passed to me for reply. Formalin is not an authorised veterinary medicinal product in the UK, however, we are content that formalin may be administered under the direction of a veterinary surgeon as a specific course of treatment administered in accordance with the prescribing cascade. As formalin is not an authorised product then we have no information on its fate or effects in the environment and no 'position' regarding its use from an environmental perspective.

VMD concluded their advice by advising the Scottish Government to contact SEPA:

It may be advisable to also contact the Scottish Environment Protection Agency (SEPA) to ensure that the release of formalin would not have any wider environmental implications.

And:

Formalin is so toxic that Marine Scotland advised staff to stay inside the wheelhouse of the wellboat during use:

From: Bland M (Michael) (MARLAB)
Sent: 04 November 2011 14:52
To: Mckenzie G (Gregor)
Cc: McKie J (Jim) (MARLAB); Downie D (Douglas)
Subject: Formalin MSDS and advice from MS H&S
Attachments: DisplayMSDSPage.pdf

Dear Gregor,

Within Marine Scotland Science Formalin is used for a variety of activities such as as a preservative for biological samples. The implications of using formalin have been assessed by staff at MSS using MSDS (attached). In consultation with H&S adviser of MSS it is apparent that the best means of controlling exposure is through isolating the member of staff from the chemical. The best way to achieve this is for the member of MS staff to remain in the wheelhouse of the vessel during the both the discharge activity and any steaming.

In addition to this information, the attention of the Wellboat operator should be drawn to the first aid measures as laid down in section 4 of the MSDS, the fire fighting measures as laid down in Section 5 of the MSDS and the accidental release measures in section 6 of the MSDS. As the discharge to the marine environment will be permitted under the marine licence, spillages on the decks of the vessel must be washed overboard to ensure no secondary exposure.

If the member of MS staff stays in the wheelhouse for the whole duration of the inspection the risk of exposure would be reduced to an acceptable level.



DisplayMSDSPage.p
df (50 KB)

Kind regards

Mike

[Fish farms under investigation for allegedly breaking environmental rules](#)
[Wildlife widely damaged by fish farm pesticides, says Sepa](#)
[Scottish Government under fire for helping block pesticide ban](#)
[Fish farm industry 'lashes out' on pesticide controls](#)
[Editorial: "Welcome move in pesticide scandal"](#)
[Fish farms industry now at war with SEPA over toxic-loch pesticide](#)
[Scottish Government under fire for helping block pesticide ban](#)
[Editorial: "Holyrood must investigate pesticide claims"](#)
[Scottish government accused of intervening to block ban on toxic pesticide](#)
[Revealed: secret role of US drug company in fish farm pesticide row](#)
[Scottish government accused of colluding with drug giant over pesticides scandal](#)
[Ban on polluting pesticide dropped after complaint from fish farmers](#)
[Government watchdog bowed to industry pressure on fish farm pollution](#)
[Salmon farming in crisis: 'We are seeing a chemical arms race in the seas'](#)
[Crackdown on fish farm pesticides after Sunday Herald investigation](#)
[Mapped: the 45 lochs polluted by fish farm pesticides](#)
[Revealed: Scandal of 45 Lochs Trashed by Pollution](#)
[Toxic Toilets- Salmon Farms Pollute Scotland's Lochs](#)
[Scottish Salmon's Lethal Legacy - Ten-fold Increase in Toxic Chemical Use in Ten Years](#)
[Salmon industry toxins soar by 1000 per cent](#)
[Sky-Rocketing Chemical Use on Scottish Salmon Farms](#)
[Scottish fish farmers use record amounts of parasite pesticides](#)
[Chemicals to control salmon parasites](#)
[Pickled Scottish Salmon, Anyone?](#)
[Formalin: Scottish Salmon's Toxic Solution](#)
[Media Backgrounder: Chemical Culture in Scotland](#)
[Silent Spring of the Sea](#)

More background via Scottish Salmon Watch's ['Chemicals'](#)

Contact:

Don Staniford: 07771 541826 (salmonfarmingkills@gmail.com)

Notes to Editors:

[1] [FO191629 disclosed by SEPA on 12 May 2020.](#)

F0191629	Finfish - Use of Formalin	12/05/2020
<ul style="list-style-type: none"> • Description: [1] Please provide information on the use of Formalin on salmon farms and hatcheries since 11 April 2019 .Please include data on the use of Formalin (and Formaldehyde). [2] Please also provide information on any objections, complaints and concerns regarding the use of Formalin on salmon farms and hatcheries. [3] Please provide information on discharges of Formalin, wastewater treatment of Formalin, environmental impacts and any mitigation strategies to deal with the environmental impacts of Formalin use. [4] Please include any emails, discussions and other information in relation to any media coverage including The Sunday Times, The Ferret and The Sunday National: [5] And any emails, discussions and other information in relation to blogs, press releases, Tweets and videos by Scottish Salmon Watch: [6] This FOI request would certainly include any complaints re. the use of Formalin/Formaldehyde by Kames in Loch Tralaig [7] Please also include any photos, videos, sampling results, tests, data and any other information in relation to the use of Formalin (and Formaldehyde) on salmon farms and hatcheries since 11 April 2019. • Information: Please refer to the attached • Related documents: <ul style="list-style-type: none"> ◦ EIR Response F0191629 r ◦ RELEASE 		

From: **FOI Helpdesk** <FOI.Mail@sepa.org.uk>

Date: Tuesday, May 12, 2020

Subject: SEPA Response - [F:0191629]

To: Salmonfarmingkills@gmail.com

Cc: foi@sepa.org.uk

Dear Mr Staniford

REQUEST FOR INFORMATION

Please refer to the enclosed response in relation to your request for information. Please accept our sincere apologies for the delay in providing this response.

Regards

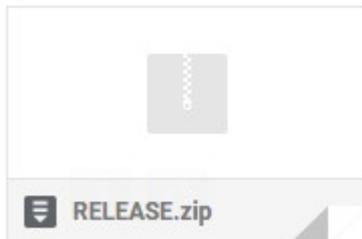
Cara Everitt

SEPA Access to Information team

Email: foi@sepa.org.uk

Tel: 01786 457700

2 Attachments



Name	Size	Packed Size	Modified	Created
Q3	14 772	12 286	2020-05-12 09:32	
Q1	9 625	7 151	2020-05-12 09:32	
Release Q6.pdf	740 776	712 733	2020-05-12 09:30	
Release Q2 Q4 Q7.pdf	344 337	331 316	2020-05-04 09:04	

1	Site Name	Operator	Licence	Month	Formaldehyde (active ingredient in grams)
2	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Sep-19	3525000
3	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Oct-19	2606000
4	Invermallie, Loch Arkaig	Mowi Scotland Ltd	CAR/L/1002071	Apr-19	2195625
5	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Dec-19	1743750
6	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Aug-19	1612500
7	Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Oct-19	1294000
8	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Jul-19	1087500
9	Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Nov-19	1057500
10	Invermallie, Loch Arkaig	Mowi Scotland Ltd	CAR/L/1002071	Nov-19	1012500
11	Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Oct-19	825000
12	Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Nov-19	624000
13	Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Sep-19	618700
14	Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Dec-19	526000
15	Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Dec-19	450000
16	Loch Avich Fish Farm	Kames Fish Farming Ltd	CAR/L/1000235	Sep-19	396000
17	Loch Lochy	Mowi Scotland Ltd	CAR/L/1002140	Nov-19	393750
18	Loch Avich Fish Farm	Kames Fish Farming Ltd	CAR/L/1000235	Oct-19	390000
19	Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Sep-19	337500

20	Loch Garry	Mowi Scotland Ltd	CAR/L/1008962	Aug-19	312375
21	Camas na Mult, Loch Ness	Mowi Scotland Ltd	CAR/L/1001886	Nov-19	281250
22	Loch Tralaig	Kames Fish Farming Ltd	CAR/L/1000233	Oct-19	253000
23	Corrie Kinloch, Loch Shin	Migdale Smolt Ltd	CAR/L/1003918	Nov-19	247500
24	Loch Frisa	Scottish Sea Farms Ltd	CAR/L/1000224	Aug-19	152000
25	Salachy, Loch Shin	Cooke Aquaculture Fresh	CAR/L/1002017	Aug-19	114000
26	Glenfinnan	Mowi Scotland Ltd	CAR/L/1008960	Apr-19	112500
27	Loch Garry	Mowi Scotland Ltd	CAR/L/1008962	Sep-19	97125
28	Loch Damp (North)	Torridon Smolts Ltd	CAR/L/1003924	Nov-19	52500
29	Invermallie, Loch Arkaig	Mowi Scotland Ltd	CAR/L/1002071	Oct-19	37500
30	Loch Damp (South), Couldr	The Scottish Salmon Com	CAR/L/1003990	Sep-19	30000

Our Ref: F0191629

If telephoning ask for:
Cara Everitt

12 May 2020

Don Staniford
salmonfarmingkills@gmail.com

Dear Mr Staniford

REQUEST FOR INFORMATION

Thank you for your recent request, received by 28 February 2020.

We have applied the exemption under Section 39(2) of the Freedom of Information (Scotland) Act 2002 as we have determined that the information sought in your request is environmental information. We are therefore handling your request under the terms of the Environmental Information (Scotland) Regulations 2004 (EIRs). In this case the public interest in maintaining this exemption and in dealing with the request in line with the requirements of the EIRs outweighs any public interest in disclosing the information under FOISA.

Please accept our sincere apologies for the delay in providing this response.

For ease of reference, your request is replicated below together with our response.

[1] *Please provide information on the use of Formalin on salmon farms and hatcheries since 11 April 2019 .Please include data on the use of Formalin (and Formaldehyde).*

Please refer to the attached spreadsheet detailing all reported Formaldehyde use at freshwater pen salmon farms since April 2019.

[2] Please also provide information on any objections, complaints and concerns regarding the use of Formalin on salmon farms and hatcheries.

We confirm SEPA has not received any licence applications that have been consulted upon regarding the use of Formalin, in the period April 2019 to the date of receiving the request.

Further to the response provided above, to provide information in relation to complaints and concerns regarding the use of Formalin on salmon farms and hatcheries we have conducted a search of SEPA's Environmental Licence Management System (ELMS) for any complaints which refer to Formalin or Formaldehyde. We have found one event that relates to a freshwater salmon farm. Please refer to the attached document, "ENV0899819_r.PDF".



Chairman
Bob Downes

Chief Executive
Terry A'Hearn

SEPA Stirling Office

Strathallan House, Castle Business Park,
Stirling FK9 4TZ

tel 01786 457700 fax 01786 446885

www.sepa.org.uk • customer enquiries 03000 99 66 99

[3] *Please provide information on discharges of Formalin, wastewater treatment of Formalin, environmental impacts and any mitigation strategies to deal with the environmental impacts of Formalin use.*

In accordance with Regulation 6(1)(b) of the EIRs we advise that this information is publicly available and easily accessible. SEPA has not received any licence applications that have been consulted upon which would relate to Formalin since April 2019 and the previous request. Please refer to the attached list of fish farm licences that may permit the use of formalin, detailing 184 sites (F0190275 sites.xls) which is also available via SEPA's disclosure log <https://www2.sepa.org.uk/disclosurelog/#>

We advise that copies of licences are available from SEPA's Registry. Each licence details the treatment data at each site (where there is any). In addition information relating to any mitigation strategies that may be employed at sites that have a licence to use formalin, where held, is held within copies of the individual licences. <https://www.sepa.org.uk/contact/registry/>

[4] *Please include any emails, discussions and other information in relation to any media coverage including The Sunday Times, The Ferret and The Sunday National:*

Please refer to the enclosed responses SEPA provided in response media enquiries in relation to formalin or formaldehyde.

[5] *And any emails, discussions and other information in relation to blogs, press releases, Tweets and videos by Scottish Salmon Watch:*

SEPA does not hold any emails, discussions or other information in relation to blogs, press releases, Tweets and videos by Scottish Salmon Watch.

[6] *This FOI request would certainly include any complaints re. the use of Formalin/Formaldehyde by Kames in Loch Tralaig*

As stated above in response to question 2, we have located the attached complaint referring to the use of Formalin or Formaldehyde in SEPA's ELMS (ENV0899819_r.PDF)

In addition we confirm that SEPA received a series of emails relating to the use of Formalin/Formaldehyde by Kames in Loch Tralaig dated between 11 April 2019 and 28 February 2020. Please refer to the enclosed seven documents containing copies of the eight SEPA responses to the emails.

We have withheld the 35 email including email chains and seven additional attachments from third parties to SEPA relating to the use of Formalin/Formaldehyde by Kames in Loch Tralaig dated between 11 April 2019 and 28 February 2020. The information has been withheld under Regulation 10(5)(f) of the Environmental Information Regulations 2004. 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*

We note the information was voluntarily provided to SEPA, as the third parties were under no legal obligation to supply the emails or attachments. We considered if the correspondence could be released with personal data redacted in accordance to regulations 11(1) and 11(2), however following redaction of

the emails and attachments it was deemed likely the content could allow the identity of individuals to be ascertained or inferred. The release would be likely to prejudice substantially the likelihood of future similar correspondence from third parties to be supplied to SEPA. 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.

[7] *Please also include any photos, videos, sampling results, tests, data and any other information in relation to the use of Formalin (and Formaldehyde) on salmon farms and hatcheries since 11 April 2019.*

Please refer to the enclosed copies of four sample analytical reports.

Please note that the information released with this response will be placed into the public domain. Therefore we have redacted some personal information and other information which may lead to the identification of individuals. We have done this under the terms of regulations 11(1) and 11(2) of the EIRs. The exceptions in regulation 11 regulate the relationship between the EIRs, the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (the DPA 2018). In this instance, the exception is absolute and we have not applied the Public Interest Test.

Please note that where we have indicated in the response above that SEPA does not hold information it is excepted under Regulation 10(4)(a) of the Environmental Information Regulations 2004. The text of which is reproduced below;

(4) *A Scottish public authority may refuse to make environmental information available to the extent that:-*

(a) *it does not hold that information when an applicant's request is received.*

The exception in regulation 10(4)(a) is subject to the public interest test in regulation 10(1)(b) of the EIRs. As SEPA does not hold the information in question there is no conceivable public interest in requiring that the information be made available.

If you are not satisfied with our response, you have 40 working days from the date of this letter to request a formal review from SEPA at:

Access to Information
SEPA
Strathallan House
Castle Business Park
Stirling
FK9 4TZ
Email: foi@sepa.org.uk

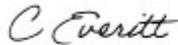
If you are still not satisfied, you can appeal to the Scottish Information Commissioner.

www.itspublicknowledge.info/appeal

Your unique reference number is F0191629. Please quote this in any future contact with us about your request.

If you have any queries in the meantime, please contact me.

Yours sincerely



Cara Everitt
Access to Information team

From: **Don Staniford** <salmonfarmingkills@gmail.com>
Date: Fri, Feb 28, 2020 at 1:04 PM
Subject: FOI re. Formalin/Formaldehyde & Salmon Farms since 11 April 2019
To: AccesstoInformation <foi@sepa.org.uk>

Please provide information on the use of Formalin on salmon farms and hatcheries since 11 April 2019 (this is a carbon copy [FOI request of F0190275 replied to by SEPA on 11 April 2019](#)).

Please include data on the use of Formalin (and Formaldehyde).

Please also provide information on any objections, complaints and concerns regarding the use of Formalin on salmon farms and hatcheries.

Please provide information on discharges of Formalin, wastewater treatment of Formalin, environmental impacts and any mitigation strategies to deal with the environmental impacts of Formalin use.

Please include any emails, discussions and other information in relation to any media coverage including The Sunday Times, The Ferret and The Sunday National:

<https://www.thetimes.co.uk/article/chemical-fears-at-scots-fish-farms-mlh6smzj6>

<https://theferret.scot/formaldehyde-fish-farms-scotland/>

<https://www.thenational.scot/news/17738883.fish-farms-urged-to-stop-use-of-toxic-chemical-in-scottish-waters/>

And any emails, discussions and other information in relation to blogs, press releases, Tweets and videos by Scottish Salmon Watch including:

[EXPOSED: Mowi's Cache of Carcinogenic Chemicals On Conservative MSPs Estate](#)

[EXPOSED: Scottish Salmon's Cascading Use of Cancer-Causing Chemical](#)

<https://twitter.com/TheGAAIA/status/1192769728009424896>

<https://twitter.com/TheGAAIA/status/1192791281447133184>

<https://vimeo.com/347341760>

<https://vimeo.com/344042944>

<https://vimeo.com/291579067>

This FOI request would certainly include any complaints re. the use of Formalin/Formaldehyde by Kames in Loch Tralaig as captured via various video footage:

<https://www.youtube.com/watch?v=Ob2VuorUOZE>

<https://www.youtube.com/watch?v=nL5mztL18Vs>

<https://www.youtube.com/watch?v=BUACyo5OEXI>

<https://www.youtube.com/watch?v=pJQKpv8B-7I>

And as reported by Scottish Salmon Watch on 8 November 2019:

<https://donstaniford.typepad.com/my-blog/2019/11/video-nasty-chemically-embalmed-scottish-salmon-at-kames-in-loch-tralaig-.html>

Please note that some information relating to Kames in Loch Tralaig was [disclosed by SEPA on 10 December 2019 via F0191202](#).

Please also include any photos, videos, sampling results, tests, data and any other information in relation to the use of Formalin (and Formaldehyde) on salmon farms and hatcheries since 11 April 2019.

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

Please provide the information electronically.

Please provide a receipt for this FOI request.

Thanks,

Don Staniford

Director of Scottish Salmon Watch

[2] [Letter to SEPA asking for a FOI review dated 13 May 2020](#) - including:

In summary, Scottish Salmon Watch asks SEPA to review the FOI response for comprehensiveness and completeness.

Scottish Salmon Watch is highly sceptical that the data provided via the Excel spreadsheet (200306-F0191629-Formaldehyde) details ALL use of Formaldehyde (Formalin) since April 2019. As reference, here's the 22.4 tonnes of Formaldehyde reported to SEPA by seven companies (Mowi, Kames, Scottish Sea Farms, Migdale Smolt, Cooke Aquaculture, Torridon Smolts and The Scottish Salmon Company) at twelve salmon farms (Camas na Mult, Loch Ness; Corrie Kinloch, Loch Shin; Glenfinnan; Invermallie, Loch Arkaig; Loch Avich; Loch Damph (North); Loch Damph (South), Couldron; Loch Frisa; Loch Garry; Loch Lochy; Loch Tralaig; Salachy, Loch Shin) on 29 occasions between April 2019 and December 2019:

.....

However, there would appear to be significant gaps in the data. For example, Scottish Salmon Watch has briefly looked at the ['Case Information' published by the Scottish Government's Fish Health Inspectorate](#) for 2019 and 2020 and has found the following cases where Formalin use is reported but not all these cases were reported by SEPA (please note that this is not an exhaustive list as the 'find' function in the PDF does not pick up all references to 'Formalin'):

.....

If you look closely at the cases above, you will see missing reports of Formalin (Formaldehyde) use. For example, the FHI visit to Torridon Smolts in June 2019 (Case # 2019-0270) cites "Formalin water treatments in summer for white spot and costia" and concedes that "Formalin treatment not recorded in medicine records as a water treatment". Yet the only report for Torridon Smolts in Loch Damph (as detailed by SEPA via [F0191629](#)) is in November 2019.

Site Name	Operator	Licence	Month	Formaldehyde (active ingredient in grams)
Loch Damph (South), Couldron	The Scottish Salmon Com	CAR/L/1003990	Sep-19	30000
Loch Damph (North)	Torridon Smolts Ltd	CAR/L/1003924	Nov-19	52500

Formalin was also reported at Landcatch's Ormsary Smolt Unit in a July 2019 FHI inspection report (Case #: 2019-0352). Why is this not reported by SEPA?

Formalin use on 3 May 2019 was reported at FAI Aquaculture's FAI Aultbea during a September 2019 FHI inspection (Case # 2019-0495). Why did SEPA not report this use?

Formalin use at Landcatch's Clachbreac facility was reported "in early November for fungus" cited a FHI visit in December 2019 (Case # 2019-0743). Why has this slipped through SEPA's net?

An inspection of Cooke Aquaculture's Loch Garasdale facility in January 2020 referred to Formalin treatments in March 2019 (Case # 2020-0006). Why was this not reported by SEPA via [F0190275](#) in April 2019?

Another FHI inspection at Landcatch's Ormsary Smolt Unit in January 2020 (Case # 2020-0010) reported recent treatment with Formalin in the last four weeks. So why was this data not disclosed by SEPA via [F0191629](#) yesterday?

And presumably the reported use of Formalin (within the last four weeks) by The Scottish Salmon Company in a FHI inspection visit on 25 February 2020 was too late to be captured by Scottish Salmon Watch's FOI request filed on 28 February 2020?

Please note that [Scottish Salmon Watch's press release in June 2019](#) also detailed cases sourced from the Scottish Government's Fish Health Inspectorate which report the use of Formalin but were NOT reported by SEPA via [F0190275 in April 2019](#).

[See Note 3 for the 'missing' reports of Formalin/Formaldehyde use]

From: FOI Helpdesk <FOI.Mail@sepa.org.uk>
Date: Fri, May 15, 2020 at 8:02 AM
Subject: SEPA Acknowledgement - [F:0191889]
To: <Salmonfarmingkills@gmail.com>, <foi@sepa.org.uk>

Dear Mr Don Staniford

REQUEST FOR FORMAL REVIEW - ACKNOWLEDGEMENT

We are writing to acknowledge receipt of your Request for Review of our decisions, received by SEPA on 14/05/2020, relating to your recent request for information which was logged by us as F0191629.

I have now instigated a Formal Review of your request under the terms of Regulation 16 of the Environmental Information (Scotland) Regulations 2004. The Formal Review will address all decisions regarding the release of information held by SEPA. Your Formal Review reference number is F0191889. Please quote this in any future contact with us about your Formal Review.

The review must be completed within 20 working days, in this case no later than 12/06/2020.

I can confirm that I will be acting as the Review Officer and will keep you updated as the Review progresses.

If you have any queries in the meantime please contact us.

Yours sincerely,

Fiona Laird
SEPA Access to Information team
Email: foi@sepa.org.uk
Tel: 01786 457700

Scottish Salmon Watch questioned the accuracy of the Formaldehyde/Formalin data in 2019:

From: **Don Staniford** <salmonfarmingkills@gmail.com>
Date: Mon, Jun 24, 2019 at 7:54 PM
Subject: Queries re. F0190275
To: AccesstoInformation <foi@sepa.org.uk>

Re. [F0190275](#)

Could you please double-check the FOI reply for completeness?

I have two specific queries/points:

1) Russel Burn Hatchery (The Scottish Salmon Company) is not listed in the Excel spreadsheet [F0190275 sites](#) as one of the 184 fish farms licensed to use Formaldehyde (Formalin) but it seems clear that it is being used.

Here's a video showing vats of Formaldehyde at the hatchery in June 2019:

<https://vimeo.com/344042944>

A report - "[The State of Scottish Salmon Farming in 2018](#)" - published by Scottish Salmon Watch in March 2019 detailed 80,000 mortalities at The Scottish Salmon Company's Russel Burn Hatchery in November 2018 with the use of Formalin identified.

Here's details from the [Scottish Government's Fish Health Inspectorate report](#):

Case No:	2018-0628	Date of visit:	27/11/2018
Time spent on site:	4 hours	Main Inspector:	ASM
Site No:	FS0500	Site Name:	Russel Burn
Business No:	FB0169	Business Name:	The Scottish Salmon Company

Additional Case Information:

Ova and fry units being built at the moment. Due to be completed in June 2019. New shed being built and the site name changed. Reminded to contact FHI to change details.

Most of the old tanks will be replaced with new bigger ones.

Vaccination reportedly caused fungus on the site shortly before the inspection. The stress of the vaccination process is thought to have reduced immunity. This together with the fact that the smoltification is now brought on with in feed treatment rather than the salt being added to the water. This is meant that the fungal spores are not killed in the water. Salt has been ordered and will added to the water the week of the inspection.

All fish removed for VMD treated with TMS, Pyceze and Aquacen (Formalin) to combat fungus

Pre-transfer check (report not yet produced. Check conducted the day before inspection) made by company biologist and advised to move the fish to seawater. Fish will be moved in December 2018, 2 weeks post inspection.

Quality cull conducted in Nov of 4.4% (in 1 day) but not reported to MSS as it is labelled as a quality cull in the mortality record.

Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	
If yes, detail:	Fungus on site reportedly from vaccination (see additional comments)		

Mortality Records	
1. Mortality records available for inspection?	Y
2. How are mortalities disposed of?	Whole fish - Dundas Chemicals
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	80,100 fish due to quality cull and fungus.
5. Evidence of recent increased/atypical mortalities?	Y
If yes, facility nos/no mortality per facility/no stock per facility/reason:	61,000 euthanized in a 'quality cull' as they were deformed or not feeding, 19/11/18, in cage D7. All killed from the same cage. 4.4% in a week.

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Pyceze

2) Re. the Excel spreadsheet detailing reported use of Formaldehyde in 2017 and 2018 ([F0190275-Formaldehyde](#)) surely there are other companies using it? Marine Harvest is the only company reporting use:

Site Name	Operator	Licence	Month	grams)
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Aug-17	356250
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Sep-17	1106250
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Oct-17	3226875
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Nov-17	2212500
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Dec-17	56250
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Jul-18	375000
Glenfinnan	Marine Harvest (Scotland) Ltd	CAR/L/1008960	Aug-18	225000
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Nov-17	1200000
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Dec-17	1762500
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Jan-18	2325000
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Feb-18	2456250
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Mar-18	318750
Invermallie, Loch Arkaig	Marine Harvest (Scotland) Ltd	CAR/L/1002071	Sep-18	18750
Loch Garry	Marine Harvest (Scotland) Ltd	CAR/L/1008962	Jul-17	239063
Loch Garry	Marine Harvest (Scotland) Ltd	CAR/L/1008962	Aug-17	547688
Loch Garry	Marine Harvest (Scotland) Ltd	CAR/L/1008962	Sep-18	140625
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	May-17	75000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jun-17	918750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jul-17	2193750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Aug-17	4200000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Sep-17	2831250
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Oct-17	1725000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Nov-17	1218750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Dec-17	2525000
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jan-18	3093750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Feb-18	3712500
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Mar-18	4443750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Apr-18	562500
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jun-18	637500
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Jul-18	2231250
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Aug-18	1818750
Loch Lochy	Marine Harvest (Scotland) Ltd	CAR/L/1002140	Sep-18	1950000

Thanks - I was just going through this information and it doesn't ring true. It would therefore be much appreciated if you can double-check your records.

For example, if you trawl through the Fish Health Inspectorate's 'Case Information' ([online here](#)) you will see numerous cases reporting the use of Formalin (cases which are not reported as in #2 above).

Best fishes,

Don

Director of Scottish Salmon Watch

Here's SEPA's FOI reply:



Mr D Staniford
Salmonfarmingkills@gmail.com

Our Ref: F0190713

If telephoning ask for:
Cara Everitt

19 July 2019

Dear Mr Staniford

REQUEST FOR INFORMATION

Thank you for your recent request, received by SEPA on 24 June 2019 in which you asked for the following information:

1) Russel Burn Hatchery (The Scottish Salmon Company) is not listed in the Excel spreadsheet F0190275 sites as one of the 184 fish farms licensed to use Formaldehyde (Formalin) but it seems clear that it is being used.

Here's a video showing vats of Formaldehyde at the hatchery in June 2019:

<https://vimeo.com/344042944>

A report - "The State of Scottish Salmon Farming in 2018" - published by Scottish Salmon Watch in March 2019 detailed 80,000 mortalities at The Scottish Salmon Company's Russel Burn Hatchery in November 2018 with the use of Formalin identified:

Here's details from the Scottish Government's Fish Health Inspectorate report:

2) Re. the Excel spreadsheet detailing reported use of Formaldehyde in 2017 and 2018 (F0190275- Formaldehyde) surely there are other companies using it? Marine Harvest is the only company reporting use:

For example, if you trawl through the Fish Health Inspectorate's 'Case Information' (online here) you will see numerous cases reporting the use of Formalin (cases which are not reported as in #2 above).

We have applied the exemption under Section 39(2) of the Freedom of Information (Scotland) Act 2002 as we have determined that the information sought in your request is environmental information. We are therefore handling your request under the terms of the Environmental Information (Scotland) Regulations 2004 (EIRs). In this case the public interest in maintaining this exemption and in dealing with the request in line with the requirements of the EIRs outweighs any public interest in disclosing the information under FOISA.

Response

We can confirm that the figures supplied for the previous request (reference F0190275) is the only information held by SEPA regarding the use of Formaldehyde (Formalin) at fish farms.
<http://apps.sepa.org.uk/disclosurelog/#>

SEPA does not hold any further information therefore it is excepted under Regulation 10(4)(a) of the Environmental Information Regulations 2004. The text of which is reproduced below;

(4) A Scottish public authority may refuse to make environmental information available to the extent that;-

(a) it does not hold that information when an applicant's request is received.

The exception in regulation 10(4)(a) is subject to the public interest test in regulation 10(1)(b) of the EIRs. As SEPA does not hold the information in question there is no conceivable public interest in requiring that the information be made available.

If you are not satisfied with our response, you have up until 16 September 2019 to request a formal review from SEPA at:

Access to Information
SEPA
Strathallan House
Castle Business Park
Stirling
FK9 4TZ
Email: foi@sepa.org.uk

If you are still not satisfied, you can appeal to the Scottish Information Commissioner.

www.itspublicknowledge.info/appeal

Your unique reference number is F0190713 Please quote this in any future contact with us about your request.

If you have any queries in the meantime, please contact me.

Here's Scottish Salmon Watch's FOI on Formalin/Formaldehyde filed in March 2019.

From: Don Staniford [mailto:salmonfarmingkills@gmail.com]

Sent: 14 March 2019 14:36

To: 'AccessToInformation'

Subject: FOI re. Formalin use salmon farms & hatcheries since 1 January 2017

Please provide information on the use of Formalin on salmon farms and hatcheries since 1 January 2017.

Please include data on the use of Formalin (and Formaldehyde).

Please also provide information on any objections, complaints and concerns regarding the use of Formalin on salmon farms and hatcheries.

Please provide information on discharges of Formalin, wastewater treatment of Formalin, environmental impacts and any mitigation strategies to deal with the environmental impacts of Formalin use.

As context, the Scottish Government's Fisheries Health Inspectorate visited Kinlochmoidart Hatchery on 9 October 2018 - revealing the use of the carcinogenic Formalin which was "flushed through a number of tanks".

Via: <https://www2.gov.scot/Topics/marine/Fish-Shellfish/FHI/CaseInformation/caseinfo2018/octdec>

[Cases 20180392-20180509](#)

Page 259 to page 270: <https://www2.gov.scot/Resource/0054/00546463.pdf>

Case No:	2018-0493	Date of visit:	09/10/2018			
Time spent on site:	3 Hrs	Main Inspector:	WJM			
Site No:	FS0146	Site Name:	Kinlochmoidart Hatchery			
Business No:	FB0169	Business Name:	The Scottish Salmon Company			
Case Types:	1 ECI	2 CNI	3 VMD	4	5	6
Water Temp (°C):	11.5	Thermometer No:	Site	FHI 045 completed:		
Observations:	Region:	HI	Water type:	F	CoGP MA	
Dead/weak/abnormally behaving fish present?	<input type="checkbox"/> Y	If yes, see additional information/clinical score sheet.				
Clinical signs of disease observed?	<input type="checkbox"/> N	If yes, see additional information/clinical score sheet.				
Gross pathology observed?	<input type="checkbox"/> N	If yes, see additional information/clinical score sheet.				
Diagnostic samples taken?	<input type="checkbox"/> N					

Additional Case Information:

Slight increased mortalities during week 39 put down to post vaccination. Levels still remained below reporting criteria and dropped back to normal levels following week.

Formalin flushed through a number of tanks (5,6,11,12) for costia

FHI contact details not updated on escape plan for Kinlochmoidart. Issue raised with site manager and will be corrected.

Water comes in via river passed through screens, but site also has 3 boreholes providing top up water for recirculation tanks.

A few morts noted in a few tanks. Maximum 2/tank. No signs of disease, no diagnostics taken. Fish sampled for VMD appeared healthy.

Increased Mortalities

wk 23 - S0 2.7% (35,000), S1 1.27% (7,000)
wk 24 - S0 2.54% (32,000), S1 0.59% (3,000)
wk 25 - S0 1.47% (18,000), S1 0.3% (1,600)
wk 26 - S0 1.69% (20,000), S1 0.18% (900)
wk 27 - S0 1.48% (17,500), S1 0.26% (1,400)

ERM put down as main cause, fish treated with antibiotics and mortalities started to decrease wk 24. Tank flow through 10 (S0 stock) worst affected, accounting for nearly 50% (19,000) of the morts wk 23 but dropped to 6,000 on wk 24. S0 stock worst affected during. Fish also stressed during this period due to increased water temperatures because of the weather.

Mortality Records	
1. Mortality records available for inspection?	Y
2. How are mortalities disposed of?	Ensiled - on site
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	Wk 37 - 40: 5336 (0.56%), 4957 (0.53%), 6404 (0.68%), 5334 (0.57%)
5. Evidence of recent increased/atypical mortalities?	N
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
6. Any other peaks in mortality during period checked?	Y
If yes, detail:	Wk 7 - 8%. Due to pump failure and airlock in pipework. Wk23,24,26 & 27 due to ERM and stress from increased water temperature (see additional information)
7. Have increased (unexplained) mortalities been reported to vet or FHI?	Y
If yes, detail action:	Antibiotics administered.
8. Have 'mortality events' been reported to FHI? If no, add MRT case and enter on mortality events sheet.	Y

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Formalin used only in tanks 5, 6, 11 & 12

Data via Page 259 to page 270: <https://www2.gov.scot/Resource/0054/00546463.pdf>

Scottish Salmon Watch has already received this email (sic) earlier today from a whistleblower:

"Yes be worth asking why Sepa is condoning dilute Formic acid being discharged into a sssi river straight from the container. They empty 25 litres of formaldehyde straight into each fish tank without following the correct procedure which should be isolating the tank. There is 10 tanks in the flothrough which runs directly into the river! This is results in the dilute formic acid being flushed into the river killing various species in the river!"

Please consider this a request for information under the relevant Freedom of Information and Environmental Information Regulations including both the Freedom of Information (Scotland) Act 2002 and the Environmental Information (Scotland) Regulations 2004 (as well as any other new or other regulations which may be appropriate).

Please provide this information electronically via email.

Please acknowledge receipt of this FOI request.

Many thanks and I look forward to a response shortly.

Best fishes,

Don

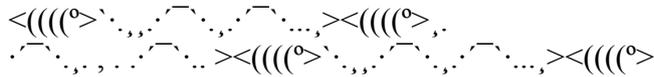
Don Staniford

Director, Scottish Salmon Watch: <https://scottishsalmonwatch.org/>

Scottish Seamon: <https://scottishseamon.co.uk/>

Read my blog via <http://donstaniford.typepad.com/my-blog>

Please donate via <https://scottishsalmonwatch.org/donate>



[3] Reports of Formalin use [published by the Scottish Government's Fish Health Inspectorate via 'Case Information'](#) (note that this is not an exhaustive list):

2020:

Case No:	2020-0006	Date of visit:	22/01/2020
Time spent on site:	4 hours	Main Inspector:	
Site No:	FS0866	Site Name:	Loch Garasdale
Business No:	FB0235	Business Name:	Cooke Aquaculture (Freshwater) Ltd

Additional Case Information:

Going to sea 28th March - Stronsay in Orkney.

Fish not vaccinated until 16th of March to prevent fungal issues

Morts are ensiled on site and collected by Hazco for disposal. Collected once a year when site is fallow. Stored in IBCs. Pumped out of IBCs and into a tanker.

Current stock input from Carindow in July 2019.

No issues with previous cycle of fish

Last treatments were post-vaccine for previous cycle - Formalin treatments - 23/3/19 - 30/3/19

Case No:	2020-0010	Date of visit:	21/01/2020
Time spent on site:	6 hours	Main Inspector:	
Site No:	FS0575	Site Name:	Ormsary Smolt Unit
Business No:	FB0061	Business Name:	Landcatch Natural Selection Ltd

Additional Case Information:

Export of 315@58g smolts to Wageningen University in Holland, IntraGB.2020.0001584. Transported by Solway Transport. From tank E1. Vaccinated 20/11/19 and post treated with formalin. Morts in tank low and attributed to fungus.

2020 S1 going to sea starting wk10 to wk17 - going SSC - Lamlash, Loch Duart to Sound of Harris

FVG in for lesions observed mainly in tank X9, suspected bacterial growth, likely Flavobacterium - treatments; florocol, cress and formalin. Morts across the site since vaccination in September about 2.2% in 2020 S1s.

Florocol treatment 16th Jan 2020 - all 2020 S1 tanks treated and currently under treatment finishing on Sunday. Feed mixed on site.

wk3 peak morts in tank X9 -146 for the day all with lesions; 13/1/20, tank X10 338 morts due to lesions

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Florfenicol, Formalin Cress	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	florfenicol formalin Cress	

Case No:	2020-0085	Date of visit:	25/02/2020
Time spent on site:	3hrs	Main Inspector:	
Site No:	FS0649	Site Name:	Loch Arkaig
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

Additional Case Information:

Waste incinerated on site unless the incinerator cannot cope with the capacity. Surplus waste is taken away by Billy Bowie and taken to Dundas Chemicals.

Saprolegnia has been confirmed on site. However it is not causing significant mortalities at this time and is currently being treated with Formalin and Cress prior to transfer off site w/b 16/03/2020.

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin	
If other, detail:	Cress has also been used as a treatment.	
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin	
If other, detail:	Fish in withdrawal for Cress.	

Case No:	2020-0096	Date of visit:	25/02/2020
Time spent on site:	2h	Main Inspector:	
Site No:	FS0301	Site Name:	Appleburn Hatchery
Business No:	FB0169	Business Name:	The Scottish Salmon Company

Additional Case Information:

Fish had been recently treated with formalin and Cress.

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin, Cress	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin Cress	

If yes, detail (if not detailed under recent disease problems).	samples in July 2019 tested positive for Flavobacterium psychrophilum and Ichthyobacter necator.
---	--

Case No:	2020-0084	Date of visit:	26/02/2020
Time spent on site:	5hrs	Main Inspector:	
Site No:	FS0150	Site Name:	Loch Lochy
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

Additional Case Information:

Waste is taken to Dundas Chemicals by Billy Bowie when capacity exceeds incinerator limits.

A few fish with fungus observed across site (1 or 2 per cage) but were sitting deep in the water and exhibiting normal behaviour.

Mortalities across site mainly attributed to Saprolegnia and RTFS.

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin	
If other, detail:	Cress has also been used as a treatment.	
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin	
If other, detail:	Fish in withdrawal from Cress.	

Case No:	2020-0087	Date of visit:	25/02/2020
Time spent on site:	2hrs	Main Inspector:	
Site No:	FS0226	Site Name:	Inchmore
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

4. Recent mortality (last 4 wks):

Total mortalities across site in Q2 and Q3's: Wk4: 908, Wk5: 3,495, Wk6: 27,373 (post-transfer), Wk7: 1,982, Wk8: 6,037, Wk9: 41. Average across the site for Q2's over the last 4 weeks: 0.03%. Average for across site for Q3's over the last 4 weeks: 0.48%.

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin, T.M.S.	
If other, detail:	Cress is being used as a replacement for	
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin, T.M.S.	
If other, detail:	Fish in withdrawal from Cress.	

[2019:](#)

Case No:	2019-0270	Date of visit:	11/06/2019
Time spent on site:	2 hours	Main Inspector:	
Site No:	FS0375	Site Name:	Loch Damph
Business No:	FB0224	Business Name:	Torrison Smolts Ltd

Additional Case Information:

Fish input 6 days ago from Barvas by lorry. More fish to arrive at the end of June. Previous cycle put to sea in Feb 2019. No reported issues. Small amount of fungus. Formalin water treatment in summer for white spot and costia. Unannounced inspection for VMD. Fish 3g so unable to take samples.

Formalin treatments not recorded in medicine records as a water treatment. No other treatments. Vaccines recorded in book.

Case No:	2019-0352	Date of visit:	21/07/2019
Time spent on site:	1 hour	Main Inspector:	
Site No:	FS0575	Site Name:	Ormsary Smolt Unit
Business No:	FB0061	Business Name:	Landcatch Natural Selection Ltd

Additional Case Information:

One tank inspected. E5, the tank containing the fish for export. No moribund fish observed in this tank. 21601 fish in tank at average weight of 28g.

Morts for E5; 2 over last week. - one of these attributed to fungus. Mort across E tanks low in past week. Peaked in E23; 43 fish/day/tank attributed to fungus and E4; 58/day fungus. Generally 0-20/tank/day attributed to fungus.

Weekly morts across site; Wk28; 0.29% 6787 - post grading fungus, wk27; 0.15% 3546 fish, wk26; 0.009% 2302 fish, wk25; 0.06% 1472 fish.

trial in treatment for fungus, halimid, formalin and Cress.

Case No:	2019-0495	Date of visit:	11/09/2019
Time spent on site:	2 hours	Main Inspector:	
Site No:	FS0941	Site Name:	FAI Aultbea
Business No:	FB0439	Business Name:	FAI Aquaculture Ltd

Additional Case Information:

FMS - had been written for lump fish currently only fw salmon on site. Future plans for SW salmon would require a new FMS. Currently only salmon on site for work at Ardtoe. Looking to do feed trials in future.

Paperword b [REDACTED], Observed [REDACTED]

Trying to refine the process for the Clean-treat boat is the future focus for the company. .

Salmon being split in next 2 weeks. Came in from Lochialort as parr at 9g on 5th August. Moving out 2nd week Nov to Ardtoe.

VHP - contact details require update along with mort disposal. Review due in July 2019 but planed for September. New VHP to be sent through on completion. Received 9/10/19

Filter intake water to 1 micron, no saprolegnia, Issue with costia prior to reducing filtration on site. Treated on 3rd May with formalin.

Case No:	2019-0583	Date of visit:	09/10/2019
Time spent on site:	4.5 hrs	Main Inspector:	[REDACTED]
Site No:	FS0270	Site Name:	Loch Avich
Business No:	FB0134	Business Name:	Kames Fish Farming Ltd

Additional Case Information:

Site started vaccination (PD7) of fish on 4/09/19 (week 36). Formalin treatment started on wk 37 (morts 1%, 3213) but on wk 38 morts suddenly jumped to 5.77% (18477).

Results from FVG from samples taken on the 16th September came back positive for furunculosis on the 19th. FVG also reported haemorrhaging in different organs, including the gills. Internal lesions were not as obvious as external ones. Bacteriology plates cultured by Kames isolated *Aeromonas salmonicida*, causative agent of furunculosis.

FVG issued prescription for Aquatet (Oxytetracycline, mixed at Kames) on 20/09/19 for 10 days of treatment which has appeared to have stopped the infection. Site still doing formalin treatment for saprolegnia.



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[REDACTED]
Kames Fish Farming Ltd
Kilmelford
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PA34 4XA
[REDACTED]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0134	DATE OF VISIT	09/10/2019
SITE No	FS0270	SITE NAME	Loch Avich
INSPECTOR	[REDACTED]	CASE No	20190583

Mortality levels had increased at the site from 1% on week 37 to 5.77% on week 38 and continued to increase to 12.16% by the end of week 40.

Furunculosis and saprolegnia had been confirmed on site by the company prior to inspection. The site had also undergone a 10 day antibiotic (oxytetracycline) treatment 2 weeks earlier and was still carrying out formalin treatments to combat saprolegnia.

Several lethargic fish were observed across site with some also having patches of fungus-like infection around the dorsal fin.

Externally fish 3 and 4 had weak haemorrhaging on the ventral surface with fish 3 also showing weak haemorrhaging around the throat area. Internally all five fish showed weak haemorrhaging on the body wall.

Case No:	2019-0665	Date of visit:	05/11/2019
Time spent on site:	4 hours	Main Inspector:	
Site No:	FS1328	Site Name:	Barcaldine Smolt Unit
Business No:	FB0125	Business Name:	Scottish Sea Farms Ltd

1. Recent treatments (last 4 wks)?		
If yes, detail:	Formalin, Pyceze	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin, Pyceze	

Additional Case Information:

Fish ensiled on site and waste transported by Murdoch and Sons Ltd to Deerdykes composting, Scottish Waters Cumbernauld.

Morts; 0.44% wk 42, 0.11% wk3, 0.65% wk44, 0.02% wk45. Attributed to post vaccine and fungal. 2 tanks treated with formalin and pyceze (Cress). Formalin under prescription. Smolt Unit; SU1Tanks 5,6

Saprolegnia post vaccine. Hoped that would not be issue on site as water is UV treated. Thought time of year (organic matter in water) and post vaccine damage has lead to the sap. Fish are being vaccinated at a larger size than normal as the unit was not ready for fish input. Large size of fish at vaccine has lead to some damage however mortality levels remain low.

First FHI visit to this site since in operation.

Case No:	2019-0743	Date of visit:	10/12/2019
Time spent on site:	3.5 hrs	Main Inspector:	
Site No:	FS0892	Site Name:	Clachbreac
Business No:	FB0061	Business Name:	Landcatch Natural Selection Ltd

Additional Case Information:

Inspection of 2019 S0 stock held in tank B3 which are being exported to France on the 10th and 13th of December 2019 (certificate numbers INTRA.GB.2019.0035001 & 0035004). One lorry transporting fish had 12 separate tank units on it. A total of ~22,440 fish due to be exported on both days with ~1,870 fish/tank on lorry.

Mortality levels low from tank (B3) holding fish for export (Wk 46 - 112, 0.25%, wk 47 - 122, 0.28%, wk 48 - 33, 0.08%), wk 49 - 26, 0.06%/ per week for tank B3). Movement records and mortality records all well maintained. Site had been treated with formalin in early November for fungus. Fish looked to be in good condition at time of inspection.

A [Scottish Government Fish Health Inspectorate report in February 2019](#) detailed the use of Formalin at [Loch Duart's Duartmore Hatchery](#):

Case No:	2019-0097	Date of visit:	20/02/2019
Time spent on site:	2 hours	Main Inspector:	
Site No:	FS0062	Site Name:	Duartmore Hatchery
Business No:	FB0398	Business Name:	Loch Duart Ltd

Additional Case Information:

Site inspected following receipt by APHA of a non site-specific welfare complaint regarding Loch Duart. Accompanied APHA vets on visit.

Ova are stripped at Geisgeil Tank Site and transferred to Ormsary Hatchery for fertilisation and incubation. Ova are brought back to Duartmore Hatchery for hatching. Site grows fish to 5g and then transferred to Duartmore for ongrowing.

Very few treatments administered per cycle - a couple of treatments with formalin for Costia, but looking at using artificial seawater for this in future.

Mortalities are transferred to Badcall office for uplift to Gray Composting.

Two more [Scottish Government Fish Health Inspectorate reports in February 2019](#) detailed the use of Formalin at Landcatch's Ormsary Smolt Unit "up to twice a week to prevent fungal infections":

Case No:	2019-0060	Date of visit:	25/02/2019
Time spent on site:	2.5 hours	Main Inspector:	
Site No:	FS0575	Site Name:	Ormsary Smolt Unit
Business No:	FB0081	Business Name:	Landcatch Natural Selection Ltd

S0s brought onto site in January 2019.

Formalin prescribed and administered under CASCADE.

Case No:	2019-0061	Date of visit:	25/02/2019
Time spent on site:	1.5 hours	Main Inspector:	
Site No:	FS0681	Site Name:	Ormsary Hatchery
Business No:	FB0081	Business Name:	Landcatch Natural Selection Ltd

Stock on site currently hatching.

Some post hatch mortalities observed, low mortality % no clinical signs observed.

Water treated with Formalin up to twice a week to prevent fungal infections.

Another [Scottish Government Fish Health Inspectorate report in February 2019](#) detailed the use of Formalin by [Kames Fish Farming salmon farm in Loch Tralaig](#):

Case No:	2019-0062	Date of visit:	26/02/2019
Time spent on site:	2.5 hours	Main Inspector:	
Site No:	FS0468	Site Name:	Loch Tralalg
Business No:	FB0134	Business Name:	Kames Fish Farming Ltd

All waste held at Kames Bay Pier, prior to being transported to Energen for disposal.

Fungus has been present on site during cycle, treated with formalin.

Another [Scottish Government Fish Health Inspectorate report in January 2019](#) detailed the use of Formalin by [Cooke Aquaculture's Ardtaraig Hatchery](#):

Case No:	2019-0018	Date of visit:	22/01/2019
Time spent on site:	6 hrs	Main Inspector:	WJM
Site No:	FS0648	Site Name:	Ardtaraig Hatchery
Business No:	FB0235	Business Name:	Cooke Aquaculture (Freshwater) Ltd

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin	

Another [Scottish Government Fish Health Inspectorate report in January 2019](#) cited Formalin at Mowi's [Inchmore Hatchery](#):

Case No:	2019-0037	Date of visit:	04/02/2019
Time spent on site:	5.5 hours	Main Inspector:	
Site No:	FS0226	Site Name:	Inchmore
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

All ova in from Norway - Mowi

import from 19/12/18 - fish split with Finfish. Electronic cert detailed Inverpolly has destination. Consignment was split at Aberdeen airport. Finfish have original copy. Imports team to contact Mowi.

Morts peak; 0.46%/site/week - post vaccine weeks 5 and 6.

Withdrawal for TMS, formalin, pyceze weeks 5 and 6 post vaccine use.

A [Scottish Government Fish Health Inspectorate report in November 2018](#) reported Formalin use at [Cooke Aquaculture's Yetts O'Muckart salmon farm in Clackmannanshire](#):

Case No:	2018-0608	Date of visit:	29/11/2018
Time spent on site:	2.5 hours	Main Inspector:	KAS
Site No:	FS0371	Site Name:	Yetts O' Muckart
Business No:	FB0235	Business Name:	Cooke Aquaculture (Freshwater) Ltd

Additional Case Information:

Stocks on site all appeared healthy. Manager stated this has being the best crop of fish through the site so far - fish all from Holmwrangle and will be from Holmwrangle again next year.
 Fish will be going off as 2019 s1's in March/April to Ness of Copister
 Also stocked in July with s0's from cairndow following problems with water at Cairndow, these fish all went out in October to Stead of Aithness
 Vaccinating over last 2 weeks with PD7. First batch vaccinated just about back to taking full feed.
 Treated weekly with prophylactic formalin plus post vac formalin dosage at the moment.

6. Any other peaks in mortality during period checked?	Y
If yes, detail:	lesions late August, early Sept - controlled with pyceze and formalin treatment. Mortalities 50-100/tank peak at 500/tank but returned to normal within 2 weeks. No antibiotics used.
7. Have increased (unexplained) mortalities been reported to vet or FHI?	Y
If yes, detail action:	FVG - significant flank lesions

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in November 2018](#) reported Formalin use at [Hebridean Smolts' Clachan Hatchery in Loch Carnan in South Uist](#):

Case No:	2018-0611	Date of visit:	27/11/2018
Time spent on site:	3 hours	Main Inspector:	JET
Site No:	FS0398	Site Name:	Clachan Hatchery
Business No:	FB0444	Business Name:	Hebridean Smolts Ltd

Additional Case Information:

Water very dark in colour, difficult to observe fish below surface.
 Small number of fish with lesions observed in tanks 5 and 6, very active in water and unable to be caught with hand nets.
 Fish sampled for VMD appeared healthy
 Stock on site hatched at Mingarry Hatchery, then on-grown at Loch Na Shibaidh Mhor and Loch A'Clachan. Moved to Clachan Hatchery for grading and vaccination. Due to move fish to sea sites March - April 2019.
 Formalin treatment prescribed by vet via cascade.

Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	N
If yes, detail:	Some fish with lesions on site, low mortality, treated with Formalin and Pyceze, samples to be sent to FVG for further analysis.		

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin, T.M.S., Pyceze
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	N
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Formalin, T.M.S.

A [Scottish Government Fish Health Inspectorate report in October 2018](#) detailed the use of Formalin at Landcatch's Ormsary Smolt Unit:

Case No:	2018-0437	Date of visit:	23/10/2018
Time spent on site:	1 hour	Main Inspector:	JET
Site No:	FS0575	Site Name:	Ormsary Smolt Unit
Business No:	FB0061	Business Name:	Landcatch Natural Selection Ltd

Recent (last 4 wks) disease problems? Y Any escaped?

If yes, detail: Fungus infection (saprolegnia) - mainly affecting 2018 S0 stock

5. Evidence of recent increased/atypical mortalities? Y

If yes, facility nos/no mortality per facility/no stock per facility/reason:

S0 stock week 41 increased from 6000/week to 11248/week. Following week dropped back down to 6270/week - Saprolegnia - site has been treating with formalin.

A [Scottish Government Fish Health Inspectorate report in October 2018](#) detailed the use of Formalin by Scottish Sea Farms at their Knock hatchery on the Isle of Mull to treat fungus:

Case No:	2018-0481	Date of visit:	03/10/2018
Time spent on site:	5hrs	Main Inspector:	SAE
Site No:	FS0254	Site Name:	Knock
Business No:	FB0125	Business Name:	Scottish Sea Farms Ltd

Recent (last 4 wks) disease problems? Y

If yes, detail: Fungus

5. Evidence of recent increased/atypical mortalities? Y

If yes, facility nos/no mortality per facility/no stock per facility/reason:

a few tanks slightly elevated mortalities between 50-200 morts per day due to fungus

6. Any other peaks in mortality during period checked? Y

Elevated mortalities in June and July 2018 due to high water temperature and low levels of water in the river. Candidatus Clavochlamydia Salmicola was identified in the gills as a possible cause of morbidity but unsure how much impact this had. First week over the reporting threshold was reported. Following 2 weeks were above the reporting threshold but not reported. See mortality events tab for details.

1. Recent treatments (last 4 wks)? Y

If yes, detail: Formalin, Pyceze

If other, detail:

2. Medicines records available for inspection? Y

3. Are records complete and correctly entered? Y

4. Are fish in a withdrawal period? Y

5. If yes, what treatment(s)? Formalin

A [Scottish Government Fish Health Inspectorate report in October 2018](#) detailed the use of Formalin by [Marine Harvest's Laddie Wood salmon farm in Loch Garry](#):

Case No:	2018-0491	Date of visit:	08/10/2018
Time spent on site:	4 hrs	Main Inspector:	WJM
Site No:	FS1104	Site Name:	Laddie Wood, Loch Garry
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin, T.M.S., Pyceze	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin, T.M.S.	

A [Scottish Government Fish Health Inspectorate report in October 2018](#) detailed the use of Formalin by [The Scottish Salmon Company's Kinlochmoidart Hatchery](#):

Case No:	2018-0493	Date of visit:	09/10/2018
Time spent on site:	3 Hrs	Main Inspector:	WJM
Site No:	FS0146	Site Name:	Kinlochmoidart Hatchery
Business No:	FB0169	Business Name:	The Scottish Salmon Company

Additional Case Information:

Slight increased mortalities during week 39 put down to post vaccination. Levels still remained below reporting criteria and dropped back to normal levels following week.

Formalin flushed through a number of tanks (5,6,11,12) for costia

Treatments and Medicines Records		
1. Recent treatments (last 4 wks)?		Y
If yes, detail:	Formalin	
If other, detail:		
2. Medicines records available for inspection?		Y
3. Are records complete and correctly entered?		Y
4. Are fish in a withdrawal period?		Y
5. If yes, what treatment(s)?	Formalin used only in tanks 5, 6, 11 & 12	

A [Scottish Government Fish Health Inspectorate report in August 2018](#) detailed the use of Formalin at [Marine Harvest's Glenfinnan salmon farm in Loch Shiel](#):

Case No:	2018-0353	Date of visit:	20/08/2018
Time spent on site:	3 hours	Main Inspector:	JET
Site No:	FS0742	Site Name:	Glenfinnan
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

Additional Case Information:

23/07/2018 vaccinations carried out (PD3)
 Post vaccination treatments of formalin and pyceze administered.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin, T.M.S., Pyceze
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Formalin, T.M.S.

A [Scottish Government Fish Health Inspectorate report in July 2018](#) detailed the use of Formalin "as biocide" at [Marine Harvest's Loch Lochy salmon farm](#):

Case No:	2018-0281	Date of visit:	03/07/2018
Time spent on site:	2 hours	Main Inspector:	AJW
Site No:	FS0150	Site Name:	Loch Lochy
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

Additional Case Information:

Morts currently 0.01% site wk. Looking for further input of 105,000 (41g) wk 6th August and 400,000 from Lochailort this week. Larger stock going off site 23rd July to Muck and Rum. Smaller stock remaining on until October 2018.

Dead fish on site incinerated

12th June; bath treatment formalin and pyceze, post transfer treatment in Q3 fish.

Formalin used as biocide but precautionary 500days applied.

Another [Scottish Government Fish Health Inspectorate report in July 2018](#) detailed the use of Formalin at [Marine Harvest's Lochailort Recirculation Hatchery](#):

Case No:	2018-0282	Date of visit:	03/07/2018
Time spent on site:	6 hours	Main Inspector:	AJW
Site No:	FS1269	Site Name:	Lochailort Recirculation Hatchery
Business No:	FB0119	Business Name:	Marne Harvest (Scotland) Ltd

Additional Case Information:

20g fish being moved out to Lochy this week. 80g fish going to sea from next Monday - Eirisort and Muck.

Treatment for gill and gut fungus in fry unit Q1 parr destined for Lochy in October. Formalin and pyceze.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	formalin and pyceze this week in fry unit for gill and gut health
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin in Q1 Fry

A [Scottish Government Fish Health Inspectorate report in April 2018](#) detailed the use of Formalin at [FAI Aquaculture's Aultbea fish farm](#):

Case No:	2018-0084	Date of visit:	18/04/2018
Time spent on site:	4 hours	Main Inspector:	JET
Site No:	FS0941	Site Name:	FAI Aultbea
Business No:	FB0439	Business Name:	FAI Aquaculture Ltd

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Branzil, Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Branzil, Formalin

A [Scottish Government Fish Health Inspectorate report in March 2018](#) detailed the use of Formalin at The Scottish Salmon Company's Langass Hatchery:

Case No:	2018-0108	Date of visit:	27/03/2018
Time spent on site:	2 hours	Main Inspector:	ALW
Site No:	FS0643	Site Name:	Langass Hatchery
Business No:	FB0169	Business Name:	The Scottish Salmon Company

Additional Case Information:

Site used to produce company's Hebridean strain of fish. Broodstock transferred onto site in late spring. Produce eyed ova for production sites and future broodstock

Select 1,000 viable ova from each family for incubation in specially modified comphatch system (trays divided into smaller compartments). Each family is raised in a separate 1m tank. Numbers reduced to 500 at 10g, 250 at 30g and to final 100 per family prior to transfer to Loch Geireann. At this point the fish are weighed, length noted and individually tagged. The families are then mixed in cages at Loch Geireann.

The site is currently being upgraded with a new incubation and holding shed which will be stocked in the next 5-6 weeks. This new facility will have a dedicated incubation area (comphatch systems, buckets and zuger jars) and 200 1m tanks for on-growing. The tanks are fed by robot with a track above the tanks for the hoppers to move along. The current facility (88 1m tanks) will be dismantled. In addition the square tanks in the other building have been removed and replaced with six 5m tanks and two 4m tanks mainly for holding the broodstock.

Currently have one of the large tanks stocked with 147,000 first feeding fry as reserve fish if needed at another site. Also stripped some sea trout broodfish, but no site was available to grow the ova so the ova were culled.

Broodstock for 2018 and 2019 seasons currently at Treanay, but 2020 broodstock currently at Loch Geireann will transfer to Ormsary Broodstock Unit next month. In the future the site will receive green ova and milt from Hebridean broodstock held at Ormsary. Genetic testing will be undertaken to help improve the line.

Recently had gut fungus in a couple of tanks, but treated with formalin. Fish on site appeared healthy.

Treatments and Medicines Records

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin

A [Scottish Government Fish Health Inspectorate report in February 2018](#) detailed the use of Formalin at Cooke Aquaculture's Furnace Hatchery on Loch Fyne:

Case No:	2018-0049	Date of visit:	27/02/2018
Time spent on site:	2.5 hours	Main Inspector:	JET
Site No:	FS0339	Site Name:	Furnace (FW)
Business No:	FB0235	Business Name:	Cooke Aquaculture (Freshwater) Ltd

Treatments and Medicines Records

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	Formalin, T.M.S.
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	Formalin, T.M.S.

A [Scottish Government Fish Health Inspectorate report in December 2017](#) detailed the use of Formalin at Landcatch's Ormsary Smolt Unit in Argyll:

Case No:	2017-0620	Date of visit:	13/12/2017
Time spent on site:	1 hour	Main Inspector:	AJW
Site No:	FS0575	Site Name:	Ormsary Smolt Unit
Business No:	FB0061	Business Name:	Landcatch Natural Selection Ltd

Additional Case Information:

Fish going from E19. Not vaccinated. Finished vaccinating other fish last week. Some fin rot and fungus in vaccinated fish treated with formalin. E19 no fungus issues and not treated

Site mortalities 1/12/17- 13/12/17; 1054, 0.08% attributed to fungus, HSS and post vaccination.

A [Scottish Government Fish Health Inspectorate report in November 2017](#) detailed the use of Formalin at [Marine Harvest's salmon farm in Loch Lochy in Lochaber](#):

Case No:	2017-0560	Date of visit:	29/11/2017
Time spent on site:	5 hours	Main Inspector:	JET
Site No:	FS0150	Site Name:	Loch Lochy
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

2017 Q4 production, fish stocked May 2017 - October 2017. Fish affected by fungus throughout cycle, weekly mortality between 1000-3000 (0.1% - 0.2%).

A number of fish in cages 25 and 26 (Finfish stock) had visible lesions, however the fish were very active and deep in the water column and so were unable to be caught for further examination.

Recent (last 4 wks) disease problems?	<input checked="" type="checkbox"/>	Any escapes (since last visit)?	<input type="checkbox"/>
If yes, detail:	RTFS detected in Finfish Hatchery stock (November 2018). Treated with formalin and pyceze.		

[RTFS = Rainbow Trout Fry Syndrome which is "[increasingly causing problems in Atlantic salmon](#)"]

6. Any other peaks in mortality during period checked?	<input checked="" type="checkbox"/>
w/b 16/10/2017 4227 (0.9%) attributed to fungus, pox virus and smolting. Stock all sent out to sea by 30/10/2017. Pre-transfer health check carried out, showed stock positive for salmon pox, branchiomonas and Flavobacterium psychrophilum, mortality levels relatively low and fish in acceptable health for transfer.	

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/>
If yes, detail:	Formalin, T.M.S., Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input checked="" type="checkbox"/>
3. Are records complete and correctly entered?	<input checked="" type="checkbox"/>
4. Are fish in a withdrawal period?	<input checked="" type="checkbox"/>
5. If yes, what treatment(s)?	Formalin, T.M.S.

A [Scottish Government Fish Health Inspectorate report in November 2017](#) detailed the use of Formalin at [Scottish Sea Farms' salmon farm in Loch Ba on the Isle of Mull](#):

Case No:	2017-0549	Date of visit:	07/11/2017
Time spent on site:	2 hours	Main Inspector:	JET
Site No:	FS0429	Site Name:	Loch Ba
Business No:	FB0125	Business Name:	Scottish Sea Farms Ltd

Additional Case Information:

Site has been reduced to 4 cages (16m2)
 Dead fish waste ensiled at Knock hatchery facility and collected for disposal
 Prophylactic formalin and pyceze treatments carried out 2 days after each stocking during October 2017

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at [Marine Harvest's Loch Ness salmon farm](#):

Case No:	2017-0436	Date of visit:	09/10/2017
Time spent on site:	3.5 hrs	Main Inspector:	ASM
Site No:	FS0434	Site Name:	Loch Ness
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin, Pyceze

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at [Cooke Aquaculture's Sallachy salmon farm](#) (certified by the Soil Association as "organic"):

Case No:	2017-0443	Date of visit:	24/10/2017
Time spent on site:	2 hours	Main Inspector:	JET
Site No:	FS0887	Site Name:	Sallachy Site
Business No:	FB0235	Business Name:	Cooke Aquaculture (Freshwater) Ltd

Additional Case Information:

Organic site
 Fish became affected by fungal infection (sapronelegia) post grading w/b 25/09/2017. Unable to treat with Pyceze due to Soil Association objection (Organic site status).
 Treated with formalin: Cages 1-3 20/10/17, cages 4-6 21/10/17, cages 7-8 22/10/17, cages 9-10 23/10/17. Approved by Soil Association. Further formalin treatment planned for 25/10/17.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at [Cooke Aquaculture's Cliff salmon farm in Shetland](#):

Case No:	2017-0460	Date of visit:	03/10/2017
Time spent on site:	2 hrs	Main Inspector:	WJM
Site No:	FS1095	Site Name:	Cliff Site
Business No:	FB0095	Business Name:	Cooke Aquaculture Scotland Ltd

Recent (last 4 wks) disease problems?	<input type="checkbox"/> Y	Any escapes (si
If yes, detail:	Saprolegnia like skin lesions, most likely secondary to fungal infection	

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at [Scottish Sea Farms' Loch Frisa salmon farm on the Isle of Mull](#):

Case No:	2017-0456	Date of visit:	10/10/2017
Time spent on site:	2h	Main Inspector:	DJT
Site No:	fs0428	Site Name:	Loch Frisa
Business No:	FB0125	Business Name:	Scottish Sea Farms Ltd

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at Scottish Sea Farms' [PRV-infected](#) Knock salmon farm on the Isle of Mull:

Case No:	2017-0455	Date of visit:	10/10/2017
Time spent on site:	5h	Main Inspector:	DJT
Site No:	fs0254	Site Name:	Knock
Business No:	FB0125	Business Name:	Scottish Sea Farms Ltd

16 May 2017 testing for PRV on two tanks following positive results on sea site post transfer, PCR tests on site were positive for PRV but there was no clinical expression however fungus was evident these fish were culled out on site.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at Marine Harvest's Glenfinnan salmon farm in Loch Shiel:

Case No:	2017-0494	Date of visit:	23/10/2017
Time spent on site:	3.5 hours	Main Inspector:	ALW
Site No:	FS0742	Site Name:	Glenfinnan
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

Additional Case Information:

Current stock due to go out to sea sites next month. Fish will be transferred to East Loch Tarbert, Gorsten, Marulaig, Skipport, Stulaigh and Torridon. Fish are transferred via lorry to Mallaig onto Wellboat.
 Site stocked with Q4 generation, but will produce Q3 and Q4 next year. Q3s will only be on site for approx 6 weeks.
 Fish were vaccinated on site with PD3 vaccine. Fish are treated with formalin and pyceze to control fungus. Accidental overdose in one cage during treatment with formalin for fungus due to human error (dosing pump not working correctly).
 Increase in mortality in cage 11 over a couple of weeks, but has reduced to expected levels now.

5. Evidence of recent increased/atypical mortalities?
If yes, facility nos/no mortality per facility/no stock per facility/reason:
P11 / 1,343 / 75,000 / overdose during formalin/pyceze treatment.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	Formalin

A [Scottish Government Fish Health Inspectorate report in October 2017](#) detailed the use of Formalin at [Marine Harvest's salmon farm in Loch Arkaig](#):

Case No:	2017-0495	Date of visit:	24/10/2017
Time spent on site:	4.5 hours	Main Inspector:	ALW
Site No:	FS0649	Site Name:	Loch Arkaig
Business No:	FB0119	Business Name:	Marine Harvest (Scotland) Ltd

Additional Case Information:

Fish from Inverpolly and Lochailort Recirc Unit. Fish probably going out to sea sites in Loch Linnhe, but not certain. No longer holding fish for River Lochy Association. Currently grading and vaccinating with Winvil 3 vaccine. Started post vaccination treatments with formalin and pyceze to prevent fungus. Have four mobile pens to move fish around site.

Treatments and Medicines Records	
1. Recent treatments (last 4 wks)?	<input type="checkbox"/> Y
If yes, detail:	Formalin, Pyceze
If other, detail:	
2. Medicines records available for inspection?	<input type="checkbox"/> Y
3. Are records complete and correctly entered?	<input type="checkbox"/> Y
4. Are fish in a withdrawal period?	<input type="checkbox"/> Y
5. If yes, what treatment(s)?	
If other, detail:	Formalin

A [Scottish Government Fish Health Inspectorate report in July 2017](#) detailed the use of Formalin at [The Scottish Salmon Company's Russel Burn Hatchery on Loch Kishorn](#):

Case No:	2017-0315	Date of visit:	28/07/2017
Time spent on site:	0	Main Inspector:	PMM
Site No:	FS0500	Site Name:	Russel Burn
Business No:	FB0169	Business Name:	The Scottish Salmon Company

Additional Case Information:

Mortalities post vaccination, formalin treatment conducted and numbers dropped to normal levels.

Case No:	2017-0315	Site No:	FS0500	Date of visit:	28/07/2017				
Start date:	End date: (if applicable)	Size of fish:	Average weight of affected population:	Species:	Yearclass:	Timescale:	Mortality rate recorded(%):	Explained/unexplained:	If explained, select reason(s):
17/07/2017	27/07/2017	5g to smolting	40g	SAL	2017 presmolt	Weekly	4.42	Explained	Fungus
Total mortality during event (if available):	Additional information (e.g. action taken by company):		Action taken by FHI (include case no where applicable):						
40,873	Mortality event attributed to fungus post vaccination. Affected stock were treated with formalin and numbers have dropped.		No further action required. Mortalities dropping to normal levels post treatment.						

Fish Health Inspectorate 'Case Information' for 2013-2019 (including details of fish farms using Formalin) is available [online here](#)

From: **Bertrand Charron** <Bertrand.Charron@asc-aqua.org>
Date: Fri, Jul 12, 2019 at 3:21 PM
Subject: RE: ASC standard permits use of Formaldehyde?
To: Don Staniford <salmonfarmingkills@gmail.com>

Hello Don,

Thank you for getting in touch and seeking some clarification re. whether the ASC standard permits use of Formaldehyde.

Whilst ASC cannot comment upon the practices of any non-ASC certified salmon farms, I can confirm that the ASC Salmon Standard provides a solid framework for an environmentally responsible management of diseases and parasites, as per the criteria and requirements listed under the Principle 5.

Notably, the ASC Salmon Standard does not permit the use of antibiotics or chemicals that are banned in any of the primary salmon producing or importing countries (for purposes of this standard, those countries are Norway, the UK, Canada, Chile, the United States, Japan and France). The Standard for instance also restricts the number of antibiotics treatment, and forbids the use of antibiotics listed as critically important for human medicine by the World Health Organization (WHO).

Certified farms are also requested to keep a list of all potential therapeutants used in salmon production (including detailed information on all chemicals and therapeutants used during the most recent production cycle, the amounts used (including grammes per tonne of fish produced), the dates used, which group of fish were treated and against which diseases, proof of proper dosing etc.

Whilst there are no specific statements re. Formaldehyde (formalin), the Salmon Standard of course requests as a minimum that all farms operate within the regulatory framework, respect withholding periods etc. Not least does the standard also request that any/all (100%) of medication events be prescribed by a veterinarian (including Formaldehyde if used in that context/ as a therapeutant).

Furthermore, if you want to check which farms are currently certified by Name / Species / Country / Status, I encourage you to use the ASC website and the advanced Search facility: <http://asc.force.com/Certificates/>

Best regards,

Bertrand Charron
Science & Sustainability Communications Manager

Aquaculture Stewardship Council (ASC)
HNK, Arthur van Schendelstraat 650 |3511 MJ Utrecht, The Netherlands

E: Bertrand.Charron@asc-aqua.org

Web: www.asc-aqua.org

On Twitter: [@ASC_aqua](https://twitter.com/ASC_aqua)

From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 12 July 2019 12:27
To: Bertrand Charron <Bertrand.Charron@asc-aqua.org>
Subject: ASC standard permits use of Formaldehyde?

Bertrand,

Does the ASC salmon standard permit the use of Formaldehyde?

Here's video reports from Mowi Ireland and Mowi Scotland:

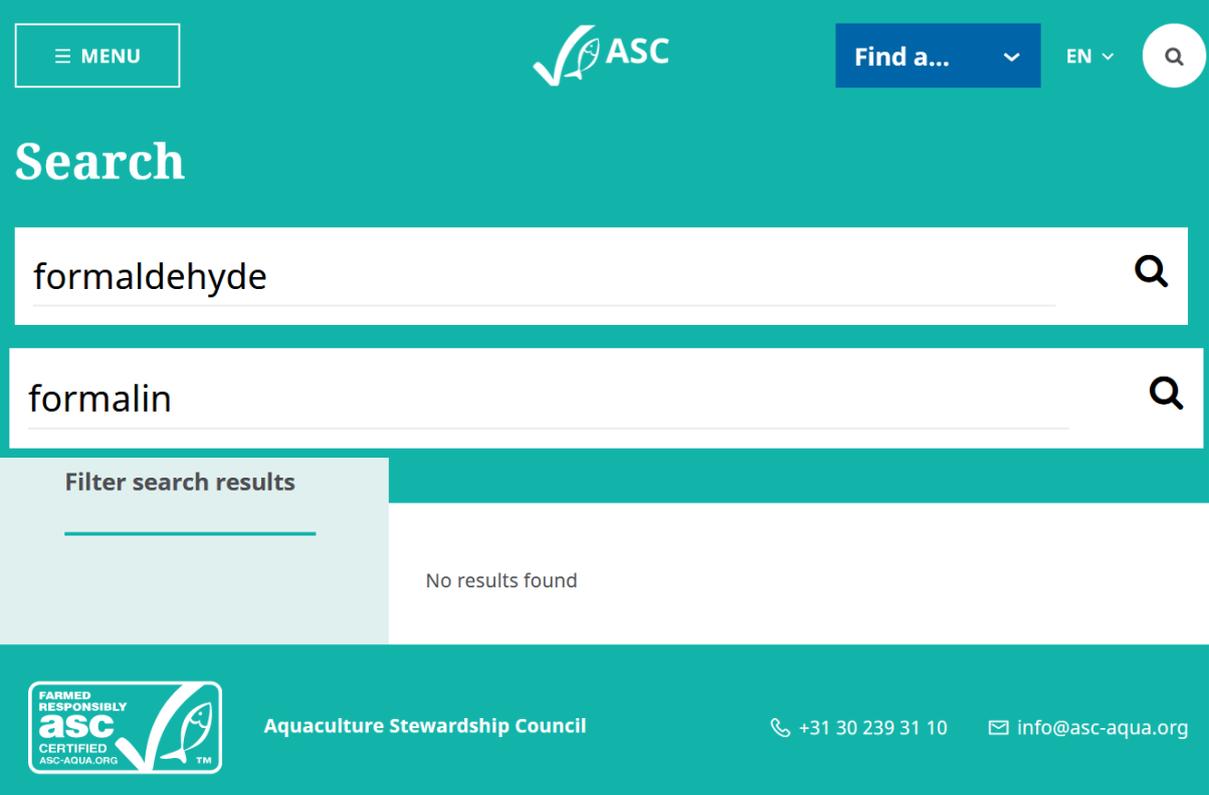
[Secret Filming in Ireland - Mowi Salmon is Dead in the Water!](#)

[EXPOSED: Mowi's Cache of Carcinogenic Chemicals On Conservative MSP's Estate](#)

Best fishes,

Don

As of 20 May 2020, the [ASC's web-site](#) still had no reference to either Formaldehyde or Formalin.



The screenshot shows the ASC website's search interface. At the top, there is a teal header with a 'MENU' button, the ASC logo, a search bar with 'Find a...' and a dropdown arrow, and a language selector set to 'EN'. Below the header, the word 'Search' is displayed in large white text. Two search input fields are shown: the first contains 'formaldehyde' and the second contains 'formalin', both with search icons to their right. Below the search fields, a 'Filter search results' section is visible, which is currently empty. The main content area displays 'No results found'. At the bottom of the page, there is a teal footer containing the 'FARMED RESPONSIBLY asc CERTIFIED ASC-AQUA.ORG' logo, the text 'Aquaculture Stewardship Council', a phone number '+31 30 239 31 10', and an email address 'info@asc-aqua.org'.

[5] A scientific paper - [Use of formalin in intensive aquaculture: properties, application and effects on fish and water quality](#) - published in 2018 includes:

Formalin exposure: consequences for fish

In the literature, there are studies with controversial conclusions about the possible consequences for fish, as a result of formalin/formaldehyde exposure. Some studies have reported negative effects in rainbow trout (*Oncorhynchus mykiss*) (Williams & Wooten 1981; WHO 1989; Buchmann *et al.* 2004), sea bream (*Sparus aurata*) and sea bass (*Dicentrarchus labrax*) (Yildiz & Ergonul 2010) and olive flounder (*Paralichthys olivaceus*) (Jung *et al.* 2003). The most common negative consequences reported by authors are the permanent damage in gills (Shepherd & Bromage 2001), in gill lamellar epithelium (Williams & Wooten 1981) and alterations in mucous cells (Buchmann *et al.* 2004). In addition, hypochloremia, reduced blood pH or increase in blood haemoglobin and plasma protein concentrations are examples of toxic effects reported in the literature for rainbow trout and Atlantic salmon (WHO 1989 and authors cited therein). Jung *et al.* (2003)

And:

Effects on aqueous effluents and environment

Formalin can reach the environment through effluent discharge after bath treatments in aquaculture systems. The effluent containing formalin may be released into natural environment with or without a specific treatment. When the aqueous effluent containing formalin is not subject to any specific treatment before its release into environment,

the reduction in formalin concentration is often achieved by dilution (WHO 1989; Masters 2004). The recommendation is that the formaldehyde concentrations that are released into environment do not exceed 1 mg L^{-1} (FDA 1995). Other specific limit values for formaldehyde discharge are reported in Masters (2004) and cover almost all range between 0.74 and 2.4 mg L^{-1} .

When water is discharged into a settlement tank outside and remain there for some period of time, the concentrations of formalin that are then released into the natural environment (effluent) would be smaller. In this situation, the decrease in formalin concentration occurs not only by the dilution of water containing formalin. As a result of exposure to the environmental conditions in the settlement tank, natural degradation of formalin also happens, in addition to oxidation–reduction reactions described above.

Finally:

Conclusions

Formalin is a disinfectant used in aquaculture to kill the infectious agents, but may have several negative effects on fish and water quality. The main effects reported as a consequence of formalin exposure to fish are damage in gills and alterations in mucous cells. LC_{50} of formalin is an indicator of the acute toxicity for fish. It is strongly affected by the type of species, their size/weight and by water characteristics. With respect to water quality, formalin may affect it in fish tanks during the treatment (depression of oxygen

levels), in the water treatment system, namely on biofilter, and when it is discharged into environment. In the environment, formalin can suffer reactions such as oxidation, biodegradation and indirect photodegradation (the direct photodegradation does not occur). The removal methodologies of formaldehyde from aquaculture's waters proposed in literature (such as aeration, biodegradation, biofiltration, neutralization) were not completely efficient and the advanced oxidation treatments may be a good and efficient alternative.

The [National Cancer Institute's web-site](#) states:

Can formaldehyde cause cancer?

Although the short-term health effects of formaldehyde exposure are well known, less is known about its potential long-term health effects. In 1980, [laboratory studies](#) showed that exposure to formaldehyde could cause nasal cancer in rats. This finding raised the question of whether formaldehyde exposure could also cause cancer in humans. In 1987, the U.S. Environmental Protection Agency (EPA) classified formaldehyde as a probable human carcinogen under conditions of unusually high or prolonged exposure (1). Since that time, some studies of humans have suggested that formaldehyde exposure is associated with certain types of cancer. The International Agency for Research on Cancer (IARC) classifies formaldehyde as a human carcinogen (2). In 2011, the National Toxicology Program, an interagency program of the Department of Health and Human Services, named formaldehyde as a known human carcinogen in its *12th Report on Carcinogens* (3).

Read more via:

[Use of formalin in intensive aquaculture: properties, application and effects on fish and water quality](#)

[Use of Formalin to control fish parasites](#)

[Medical Management Guidelines for Formaldehyde](#)

[Genotoxicity of formaldehyde: molecular basis of DNA damage and mutation](#)

[Media Backgrounder: Formalin - Scottish Salmon's Toxic Solution](#)

[IARC Classifies Formaldehyde as Carcinogenic](#)

[Formaldehyde: evidence of carcinogenicity](#)

MRCVS [reported in December 2017](#):

New guidance on the use of formaldehyde in fish

Guidelines clarify regulations vets should abide by

New guidelines to assist veterinary surgeons considering formaldehyde for the treatment of fish have been approved by the British Veterinary Association (BVA).

Developed by the BVA and the Fish Veterinary Society (FVS), the guidelines clarify how formaldehyde can be used and what regulations vets must abide by. They also include information for formaldehyde's use as a biocide.

Formaldehyde is classified as a Category 1B carcinogen. It is used both as a medicine to treat fish and as a biocide to disinfect facilities and equipment.

The use of formaldehyde to treat or prevent fish diseases falls within the scope of the Veterinary Medicines Regulations. Veterinary surgeons can only prescribe the compound via the Cascade, as there are no authorised medicinal products containing formaldehyde in the UK.

At least one formaldehyde product is licensed in several Mediterranean countries. But the use of this requires a special Import Certificate from the Veterinary Medicines Directorate. This more costly option - together with conflicting information within the industry itself - meant there was a need for clarifying guidance to help other vets in this situation.

"This is a really important issue within the UK aquaculture industry, particularly given the contribution farmed Scottish salmon makes to the UK economy," said FVS president Ronnie Soutar. "Formaldehyde has been used as both a biocide and a medicine on UK freshwater fish farms for a long time but it's fair to say there has been some confusion between the two categories of use."

He continued: "Staying within prescribing law is key to the success of the UK's aquaculture industries, and we hope the new BVA/FVS guidelines will provide vets with the essential guidance needed. I know that on-going discussion is also required, particularly to address the concerns of trout farmers."

The guidelines were approved at BVA Council on 13 December and will soon be available on the BVA website.

FVS and BVA [reported in 2018](#):



"Formaldehyde has been used as both a biocide and a medicine on UK freshwater fish farms for a long time" - Ronnie Soutar, FVS president.

Joint guidance on the use of formaldehyde in aquaculture

Formaldehyde¹, which is classified as a Category 1B carcinogen², is used as both a biocide and a medicine in aquaculture. This note is intended as guidance to veterinary surgeons considering formaldehyde for the treatment of fish under their care.

Use as a veterinary medicine

The use of formaldehyde to treat or prevent fish diseases, such as freshwater ectoparasitism, falls within the scope of the Veterinary Medicines Regulations. As there are no authorised medicinal products containing formaldehyde in the UK, veterinary surgeons can only prescribe using the Cascade.

Veterinary surgeons prescribing formaldehyde-containing products should be familiar with [VMD guidance on the Cascade](#) and be aware that the effectiveness and toxicity of the product is likely to vary between fish species and with environmental conditions. In addition to guidance on user safety, including appropriate Personal Protective Equipment (PPE), clients should be made aware that the prescribed product is unauthorised in the UK and the implications thereof.

Food-producing animals may only be treated with medicines authorised in a member country of the European Union. FVS and BVA are aware that at least one formaldehyde product is licensed in several Mediterranean countries. The use of this, or any other product which meets the criteria now or in the future, requires a Special Import Certificate from the Veterinary Medicines Directorate. There is an on-line process for this via the [VMD's website](#).

¹ Formaldehyde is CH₂O, the simplest aldehyde. Formalin is the name for saturated (37%) formaldehyde solution. Thus, a protocol calling for 10% formalin is roughly equivalent to 4% formaldehyde

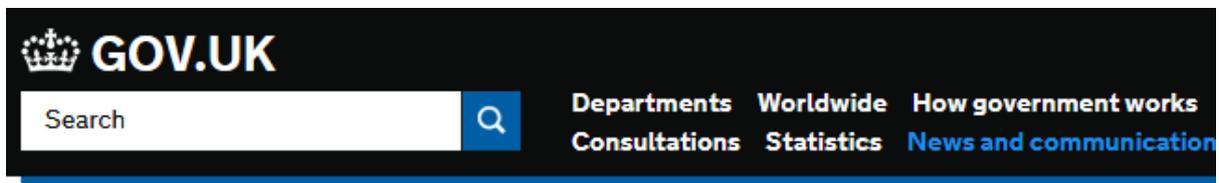
² <https://www.gov.uk/government/news/changes-to-formaldehyde-formalin-rules>

Use as a biocide

Formaldehyde's use as a biocide in the absence of live fish, for example for the disinfection of facilities or equipment, does not fall within medicines regulations. Fish farmers, as professionals, may use industrial grade formaldehyde in this way without veterinary involvement.

Formaldehyde is also used in other livestock industries as a fumigant, disinfectant and for pest control. Definitions of biocidal product types [may be found online](#).

In 2015, the UK Government [issued a press release explaining changes to the rules](#):



The screenshot shows the top navigation bar of the GOV.UK website. It features the GOV.UK logo on the left, a search bar in the center, and a list of navigation links on the right: Departments, Worldwide, How government works, Consultations, Statistics, and News and communication.

[Home](#) > [Environment](#) > [Wildlife, animals, biodiversity and ecosystems](#) > [Animal and plant health](#)

Press release

Changes to Formaldehyde (Formalin) rules

Informal note on Defra's position on Formaldehyde (Formalin)

Published 23 November 2015

From: [Centre for Environment, Fisheries and Aquaculture Science](#)

From 1 January 2016 formaldehyde will be classified as a Category 1B carcinogen. This means certain restrictions will apply to it.

It will only be able to be used for professional use, and it can only be put on the market by a registered supplier. It will have to be labelled appropriately for its chemical categorisation and therefore used in a competent manner.

The registered supplier is the company or consortium which has supported its application through the [REACH process](#). Formaldehyde's application was supported by Germany, so it is assumed a German company has done the technical safety work.

The following impacts will happen on its use for animal related agriculture:

- there is no UK legal definition of 'professional'. Therefore users in the UK are required to be competent and using the chemical in a professional activity.
- Fish, poultry, sheep and cattle farmers - as professionals - will be able to continue to use products containing formaldehyde for dis-infection, fumigation and foot bathing purposes. It can be used for other professional purposes eg preservation of samples for histopathology.
- whoever is physically using the product must be competent enough to meet the restrictions and precautions detailed by the labelling. There is no requirement to prove competency before purchase and use. However if a health and safety issue arose through its use and be investigated, and the person using it found not to have been suitably trained and competent, then there could be grounds for prosecution.

- UK suppliers of formaldehyde containing products will have 2 options in becoming registered suppliers:
 - they would need to become part of the German consortium and pay a fee
 - the German registered supplier cannot refuse, if asked, to share the appropriate data and provide a letter of access to another company when requested. There is no barrier to the requesting company being asked to pay for this access, but it then makes them part of the registered supplier supply chain and able to access the product.

Additionally formalin is being considered in the evaluation programme of the biocidal products regulations. Approval for its use as a biocide will be for 5 years from when a Member State unqualified majority vote agrees to it. [HSE](#) believes it is unlikely a qualified majority will not be reached for formalin ie it should be approved. Again approval means that use comes with precautions and restrictions stipulated in appropriate labelling. These may be to wear specific personal protective equipment, or use it only below certain concentration limits.

Formaldehyde (formalin) is not approved as a veterinary medicine. The veterinary medicines legislation and the biocide legislation cross over, but products are only on one or the other and not both. Therefore use in foot baths is technically as a biocide and not a veterinary medicine.

Read more on the [Formaldehyde REACH Consortium online here](#):

Consortium/SLT

Index

- [Substances covered](#)
- [Membership](#)
- [Joint Submission and Letter of Access](#)
- [Interesting links](#)
- [Contact](#)

Formaldehyde REACH Consortium

[back](#)

The manufacturers of Formaldehyde joined efforts for their REACH compliance activities and have officially launched the Formaldehyde REACH consortium on March 11th 2010. **The dossier was successfully submitted in 2010.**

Consortium description

Through the **Formaldehyde consortium**, the manufacturers have decided to join efforts to prepare a consistent registration dossier building on the experience gained during the Formacare program. The project management and secretariat of the consortium lays in the responsibility of **ReachCentrum**. The technical content preparation of the registration dossier will be managed by the Lead Registrant BASF.

Substances covered

The following substance is covered by the Formaldehyde Consortium:

Substance name	EC number	CAS number	SIP	Uses	SIEF Agreement
Formaldehyde	200-001-8	50-00-0	SIP	Uses	SIEF Agreement

A report - "[Review of freshwater treatments used in the Scottish freshwater rainbow trout aquaculture industry](#)" - published in 2015 by the Scottish Aquaculture Research Forum included:

SARF 100 Review of Freshwater Treatments

5.4 Formalin

Formalin is an aqueous solution of 37-40% formaldehyde gas and 6-13% (12%) methane (that prevents polymerization and the formation of paraldehyde, which is toxic to fish. Formalin was widely used by all the respondents to control an important range of disease problems. These included white spot, bacterial gill disease and a range of other ectoparasites (particularly costia, microcotyle and flukes such as trichodina). Reasons for its use were its reported high efficacy against the main diseases indicated, coupled with its cheap relative cost and its relatively high margin of safety. The high margin of safety is reflected in the wide range of dosing and application rates quoted by the respondents. Formalin is effective both as a bath or dip treatment for fry and older fish, but is also a good egg treatment for control of saprolegnia. One respondent reported that when he treated eggs with formalin they were visibly cleaner after the treatment and were reportedly more easily transported. This was in contrast to treatment with others chemicals (eg Pyceze), where the eggs were reportedly quite 'sticky' after treatment.

5.4.1 Likely continued availability of formalin

Formalin is typically sourced from wholesalers as a biocide and its use is not directed by veterinarians (it is not a licensed medicine). There are concerns over the likely continued availability of formalin. Although its potential environmental risks are considered to be limited (US FDA, 1995), a number of studies have raised concerns over its reported safety to workers. This has culminated in the production of a report by the US National Toxicology program that states formalin is 'known to be a carcinogen' based on sufficient evidence of carcinogenicity from studies in humans and supporting data on mechanisms of carcinogenesis (National Toxicology Program, 2011). The BPR has exclusion criteria (Article 5. 1a) that prohibit the authorisation of active substances 'which have been classified in accordance with Regulation (EC) No 1272/2008 as, or which meet the criteria to be classified as, carcinogen category 1A or 1B'. However, there is some latitude in the regulations that allows a product containing an active substance to be approved that are referred to in Article 5. 1 (Article 5.2) where:

- The risk to humans, animals or the environment from exposure to the active substance in a biocidal product, under realistic worst case conditions of use, is negligible, in particular where the product is used in closed systems or under other conditions which aim at excluding contact with humans and release into the environment
- It is shown by evidence that the active substance is essential to prevent or control a serious danger to human health, animal health or the environment.

5.4.2 Use of formalin containing medicinal products in other EU Member States and internationally

As described above, formalin-containing products used in the UK rainbow trout industry are typically marketed for use as biocides. At the present time, there is no product with formalin as its main active ingredient that is marketed for use as a veterinary medicinal product in the UK. There is a product, Aquacen (<http://www.cenavisa.net/acuicultura>), that has an MA from the Spanish authorities (2127 ESP) for the control of disease in turbot, *Psetta maxima*, caused by ectoparasite *Philasteridis dicentrachi*. A veterinarian may be able to prescribe under the cascade a veterinary medicinal product (VMP) not authorised in the UK, but authorised in another Member State (MS) for use, in this case any

food producing animal species, in accordance with an import certificate issued by the VMD (<https://www.vmd.defra.gov.uk/sis/sic-application.aspx>). This would be to avoid causing unacceptable suffering, where there is no suitable veterinary medicine authorised in the UK to treat a condition, or veterinary medicine authorised in the UK for use in another animal species or for a different condition in the same species.

<http://www.vmd.defra.gov.uk/pdf/vmgn/vmgnote13.pdf>

Of less direct relevance, there are also three formalin containing (37% by weight of formaldehyde gas in water) licensed products available in the US to treat ectoparasites in freshwater fish species, including rainbow trout. Information on these products and their approvals can be found on the FDA website.

<http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/Aquaculture/ucm132954.htm>

In summary, all three approvals cover use of these products in the US for the control of (a) external protozoa (*Chilodonella* spp., *Costia* spp., *Epistylis* spp., *Ichthyophthirius* spp., *Scyphidia* spp. and *Trichodina* spp.), and the monogenetic trematode parasites (*Cleidodiscus* spp., *Dactylogyrus* spp., and *Gyrodactylus* spp.) on all finfish, (b) fungi of the family Saprolegniaceae on all finfish eggs and (c) external protozoan parasites (*Bodo* spp., *Epistylis* spp., and *Zoothamnium* spp.) on penaeid shrimp.

For actual treatment of external parasites, the labels recommend using 1 hour maximum exposures to up to 170 mg/l for treatments over 50°F (=) and up to 250 mg/L for treatments less than 50°F . Important safety and efficacy data used to support the licensing of these formalin products was obtained under the US Aquatic Animal Drug Approval Partnership (AADAP) Program <http://www.fws.gov/fisheries/aadap/home.htm>.