

Case No:	<input type="text" value="2020-0116"/>	Date of visit:	<input type="text" value="10/03/2020"/>			
Time spent on site:	<input type="text" value="8 hours"/>	Main Inspector:	<input type="text" value=""/>			
Site No:	<input type="text" value="FS0015"/>	Site Name:	<input type="text" value="Loch Greshornish"/>			
Business No:	<input type="text" value="FB0119"/>	Business Name:	<input type="text" value="Mowi Scotland Ltd"/>			
Case Types:	1 <input type="text" value="ECI"/>	2 <input type="text" value="CNI"/>	3 <input type="text" value="SLI"/>	4 <input type="text" value="VMD"/>	5 <input type="text" value="DIA"/>	6 <input type="text" value=""/>
Water Temp (°C):	<input type="text" value="7.6"/>	Thermometer No:	<input type="text" value="T146"/>	FHI 045 completed	<input type="text" value=""/>	
Observations:	Region:	HI	Water type:	S	CoGP MA	M-24
Dead/weak/abnormally behaving fish present?	<input type="text" value="Y"/>	If yes, see additional information/clinical score sheet.				
Clinical signs of disease observed?	<input type="text" value="Y"/>	If yes, see additional information/clinical score sheet.				
Gross pathology observed?	<input type="text" value="Y"/>	If yes, see additional information/clinical score sheet.				
Diagnostic samples taken?	<input type="text" value="Y"/>					

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

28/10/2019 1.4 kg 2.06% AGD + AGD treatments 15297
30/12/2019 2kg 3.07% Mechanical lice treatment in fish affected by AGD 21445
06/01/2020 2.1kg 2.21% Mechanical lice treatment in fish affected by AGD 14961
27/01/2020 2.3 kg 1.94% Treatment related mortality 12752
03/02/2020 2.4 kg 1.11% Treatment related mortality + AGD 7129
10/02/2020 2.48 kg 1.09% Treatment related mortality + AGD 6922
17/02/2020 2.48 kg 1.2% Treatment related mortality + AGD 7547

Lump fish input from ROI and Anglesey (Ocean Matters)

ERM - starting antibiotic treatment on Monday. Biomar supplying premixed Florfenicol. Observing lethargic fish with haemorrhaging internally. Mowi vet diag ERM.

All fish input from Lochailort Feb/March 2019. Fish moved off site to Noster in May 2019.

Input of lumpfish from ROI not in movement record book. Transport cert was available, input 28/2/20. Input 23/2/20 from Ocean Matters was in book.

Send out new movement book - sent 17/3/20

Mort disposal; Currently skipped and removed by Billy Bowie to Dundas Chemical, Moss Pary, Dumfries. Normal practice would be incineration on site.

On inspection in excess of 30 moribund fish observed in each pen, about 10% of these moribund fish with dorsal lesions mainly behind dorsal fin.

2/2/20-10/3/20; 8789 morts for last 7 days attributed to ERM. 23/2- 1/3 10093 morts attributed to treatment and ERM 15/2-22/2 7547 morts attributed to AGD and treatment.

No treatments this month (March). Last month (Feb); Extended FW treatment across site. Pens 4,11, 3, 5, and 2 treated with salmosan in Feb 2020.

Mort records available for cleaner fish; 133 morts in past week attributed to handling. Approx. 2500 morts from 1/1/20 to 10/3/20. Cleaner fish stocked at 12%.

VHP states fish will be vaccinated for ERM, Furunc, Moritella

Contact with site manager 19/3/20 for update; Movement book has been updated. Lump fish are netted out from the crowded fish prior to being pumped onto wellboat for FW treatments. Discussed the antibiotic treatment and the non-feeding moribund fish. Increased effort to remove moribund from the site, health team on site this week for further testing and investigate lesions observed in the fish. Have seen a drop in appetite from population. Confirmed the fish are not vaccinated for ERM.

Last lice count 9/3/20; Site average; gravid female; 0.16, females; 0.15, males; 0.15, pre-adults; 0.39, chalimus; 0.61, calagus; 0.01, AGD; 0.46, PGD; 0.52.

Lice figures were higher in Feb but fish were FW and salmosan treated and numbers have now come down. Pre-treatment figures 28 Jan; female gravid; 1.23, females; 0.68, adult males; 0.31, preadults; 0.7, chalimus; 0.52, caligus; 0.18, AGD; 1.11, PGD; 0.42.

Case No: 2020-0116 Site No: FS0015

Date of Visit: 10/03/2020

Registration/Authorisation Details

1. Business/site details summary checked by site representative?
2. Changes made to details?

Site Details

Total No facilities	12	Facilities stocked	
Species	sal	lumpfish	
Age group	2019 Q1	adult	
No Fish	603,000	105,000	
Mean Fish Wt	2.8kg	100g	
Next Fallow Date (Site)	Dec 2020	Next Input Da	

Recent (last 4 wks) disease problems?

Y

If yes, detail:

AGD and ERM

Movement Records

1. Movement records available for inspection?
2. Date of last inspection:
3. Are records complete and correctly entered?
4. Are movement records available for dead fish and waste?
5. Are records complete and correctly entered?
6. Are health certificates for introductions (outwith GB) available?

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)?
- If yes, is there a system in place for maintenance of transportation records?

Mortality Records

1. Mortality records available for inspection?

2. How are mortalities disposed of?

If other detail:

3. Mortality records complete and correctly entered?

4. Recent mortality (last 4 wks):

see additional info

5. Evidence of recent increased/atypical mortalities?

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

across site, but particularly in pen 6 with ERM peak 700/day morts. 55000 fish in pen.

6. Any other peaks in mortality during period checked?

If yes, detail:

see additional info

7. Have increased (unexplained) mortalities been reported to vet or FHI?

If yes, detail action:

prescribed antibiotics

8. Have 'mortality events' been reported to FHI? If no, add MRT case and enter on mortality events sheet.

1. Recent treatments (last 4 wks)?

If yes, detail:

salmosan, FW, TMS

If other, detail:

2. Medicines records available for inspection?

3. Are records complete and correctly entered?

4. Are fish in a withdrawal period?

5. If yes, what treatment(s)?

salmosan

If other, detail:

6. Are medicines stored appropriately?

Biosecurity Records

1. Biosecurity records available for inspection?

2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?

3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* been included?4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected *when* that will be notified to Scottish Ministers?

5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status)?

6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission (movement of staff, visitors, equipment, live or dead fish etc.)?

7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals?

8. Have the biosecurity procedures been adequately implemented on site?

If no, detail:

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?

2. If yes, are results available for inspection?

3. Any significant results?

If yes, detail (if not detailed under recent disease problems).

Records checked between:

8/11/17-10/3/2

Inspector(s):

12	No facilities inspected	12
te (Site)	not known	

Any escapes (since last visit)?

	<input type="text" value="Y"/>
08/11/2017	<input type="text" value="N"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
Whole fish - Dundas Chemicals	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>
	<input type="text" value="Y"/>

	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
TMS		
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
... (unexplained) mortality at the site	<input type="checkbox"/>	Y
ected been included and <i>how</i> and	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
atus, certification if required)?		
ssion of disease been covered	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
mals held on site?	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
	<input type="checkbox"/>	Y
20		

Case no: Site No: Date of visit/
Sampling:

Priority samples: VI BA PA MG HI

Time sampling starts/ends: Inspector: VMD No.

Environmental conditions: 1 2 3 4 5

Summary samples HIST BA MG VI PA Total Samples

Add Fish/Pools - click

Pool/Fish No	F1	F2	F3	F4	F5	P1						
Fish nos	1	2	3	4	5	1-5	6	7	8	9		
Pool Group	P1	P1	P1	P1	P1							
Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL		
Average weight	3KG	3KG	3KG	3KG	3KG	3KG	3KG	3KG	3KG	3KG		
Sex	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Water Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW		
Stock Details		Lochailort	Lochailort	Lochailort	Lochailort	Lochailort	Lochailort	Lochailort	Lochailort	Lochailort		
	Stock Origin											
Facility No	6	6	6	6	6	6	1	4	8	2		

Case no: 2020-0116

Site No: FS0015

Method of killing: Percussive

Date of visit: 10/03/2020

Inspector(s):

Sheet Relevant: Y

S for strong presence: M for medium presence: W for weak presence

Fish Number		1	2	3	4	5					
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark	S	S	S							
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale		S								
	Zoned		W								
	Necrotic										
Lesions	Flank										
	Elsewhere				S	S					
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers										
Internal Signs											
Ascites	Clear				M						
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem				S						
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem				W						
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged	S		S		S					
	Granulomas										
Gut	No food present	S	S	S	S	S					
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging			S							
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Additional comments:

f1 - Runty fish, ragged gills with white patches, enlarged gallbladder. F4 -dorsal lesion, inflamed hind gut. F5 - dorsal lesion, enlarged gall bladder.

Case Number:	2020-0116	Site No:	FS0015	Insp:		
Date of Visit	10/03/2020	No of movements/supp./dest.			Score	
Live fish movements		0	1-5	6-10	>10	
Movements on (from out with GB) of susceptible species	Frequency of movements on from equivalent MS	0	5	10	14	5
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	
	Number of suppliers	0	5	10	14	5
Movements off	Frequency of movements off	0	3	6	10	10
	Number of destinations	0	3	6	10	3
Exposure via water	Site contacts	0	1-5	6-10		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		1
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
Management practices		None	Secure	Unsecure		
Water contacts with processors	Any processing plant discharging into adjacent waters	0	1	2		0
On farm processing within the rules of the directive	No on farm processing	0				0
	Processing own fish (re-cycling risk)	1				
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				0
	Common processes with other farms	3				
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
Biosecurity	Number of sites	1	2 or 3	≥ 4		
Contacts with other sites	Sites operating from single shorebase	0	1	2		0
	Sites sharing staff and equipment	0	1	2		
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
CoGP/Regulator						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
Total Rank					24	MEDIUM

Case No: **2020-0116**

Site No: **FS0015**

Sea Lice Inspection (Seawater Sites Only)

- 1. Has the site experienced sea lice problems in the previous 4 years?
- 2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?
- 3. Does the site have access to a range of licenced in-feed and bath sea lice medications (including deltamethrin, azamethiphos and emamectin benzoate) as well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of time?
- 4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?
- 5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)
- 6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)
- 7. Are sea lice (*L. salmonis*) record levels below the suggested criteria for treatment in the CoGP during the period that records are inspected? (CoGP Annex 6)
- 8. Have average adult female sea lice (*L. salmonis*) numbers per fish been at a level of 3 or above (prior to w/b 10/6/19) or 2 or above (from w/b 10/6/19) during the period that records are inspected?
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.
- 9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)
- 10. Have therapeutic treatments been administered or other actions taken when *L. salmonis* levels have exceeded the suggested criteria for treatment or where *C. elongatus* is considered to have welfare implications? (CoGP 4.3.82, 5.3.51)
- 11. Has any other action been taken (where applicable)?
- 12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?
- 13. Are treatments, where conducted, carried out in cooperation between participating farms?
- 14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?
- 15. Is there a site specific written lice management procedure with waypoints describing set actions to deal with recognised scenarios during the escalation of a sea lice infestation?
- 16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.

Containment Inspection

- 1. Has the site experienced equipment damage due to predators in the current or previous production cycles?
- 2. Are measures in place to mitigate against the predation experienced on site? (Detail below)

add, top nets,

If other, detail below:

- 3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?
If Yes proceed with questions 4 – 9. If No skip to question 10
- 4. Have these been reported to Scottish Ministers?
- 5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 7. Were methods (if any) used to recover escapees? If yes give detail
- 8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)
- 9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)
- 10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)

Case No: 2020-0116

Site No: FS0015

Date of Visit: 10/03/2020

Inspector: [REDACTED]

Point of Compliance

1. Is the farm under inspection located within a farm management area?

If N, no further questions require completion.

Points of Compliance for Both Farm Management Agreements and Statements

2. Has a current farm management agreement or statement (FMAg/S) been prepared?

3. Is the current FMAg/S available for inspection?

4. Does the FMAg/S identify the relevant farm management area?

5. Does the FMAg/S identify the fish farm site(s) to which it applies?

6. Does the FMAg/S identify the date of commencement of the agreement or statement?

7. Does the FMAg/S identify the date of review?

Arrangements for Fish Health Management

8. Does the FMAg/S identify the minimum health standards for the stocks to be introduced to the area or farm?

9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?

10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?

11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?

12. Does the FMAg/S identify the arrangements for the storage and disposal of any dead fish from any fish farm in the area or the individual farm?

Arrangements for The Management of Sea Lice

13. Does the FMAg/S identify arrangements for the sharing of data on sea lice numbers and treatments?

14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?

15. Does the FMAg/S identify any requirements for the sensitivity testing of available treatments for sea lice on farms in the area or individual farms?

16. Does the FMAg/S identify the circumstances under which biological controls and cleaner fish are to be used on farms in the area or individual farms?

17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?

19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?

Harvesting

20. Does the FMAg/S identify acceptable harvest practices on farms in the area or individual farms?

Fallowing

21. Does the FMAg/S identify the dates by which the area or individual farm will be fallow and the earliest date when a farm or area may be restocked?

22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?

23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?

Point of Compliance for Farm Management Agreements Only

24. Does the farm management agreement include arrangements for persons to become, or cease to be, parties to the agreement?

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?

26. What is the version no/date of issue of the FMAg/S?

Site No: FS0015
Case No: 2020-0116
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



[REDACTED]
Mowi Scotland Ltd
Stob Ban House
Glen Nevis Business Park
Fort William
PH33 6RX
[REDACTED]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0119	DATE OF VISIT	10/03/2020
SITE No	FS0015	SITE NAME	Loch Greshornish
INSPECTOR	[REDACTED]	CASE No	20200116

Section 1: Summary

Loch Greshornish was visited following reported increased mortality levels. During the inspection many moribund fish were observed in the pens, several with lesions. Five fish were removed for diagnostic examination.

Histopathology examination revealed mixed gill pathology suggestive of historical amoebic gill disease (AGD) and more recent, mixed gill insult. Oedema and haemorrhage was noted possibly associated with exposure to harmful environmental agents such as cnidarian jellyfish but are also previously documented consequences of enteric redmouth (ERM) in salmonids. Other notable findings included multifocal hepatocellular necrosis, and inflammatory changes to skeletal muscle likely due to bacterial infection.

Due to gill health issues observed on site, samples were also screened for *Paranucleospora theridion* (syn, *Desmozoon lepeophtherii*), salmon gill poxvirus and *Neoparamoeba perurans* (AGD) by QPCR. Samples tested positive for all three pathogens.

Yersinia ruckeri was isolated by bacteriology and confirmed by QPCR. As a primary fish pathogen it may have been implicated in morbidity, however it was only isolated from kidney material of fish 3. Because of reported issues with *Yersinia* on site further tests were conducted to establish the sensitivity profiles. From the tests conducted, we do not have evidence of resistance to amoxicillin, oxytetracycline, sulphamethoxazole/trimethoprim or florfenicol. Four separate heavy mixed growths of *Vibrio* spp. were identified from fish 4 and 5.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

Loch Greshornish was visited following reported increased mortality levels and to carry out routine EC and VMD inspections. The increased mortality had been attributed to AGD, treatment related issues and more recently, infection with *Yersinia ruckeri*; the causative agent for Enteric Redmouth (ERM). Mortality for the past seven days was 8,789 attributed to *Yersinia* and 10,093 mortalities the week before that. The site staff were awaiting delivery of a pre-mixed antibiotic (florfenicol) feed.

On inspection in excess of 30 moribund fish were observed in each pen. About 10% of the moribund fish had dorsal lesions, mainly behind the dorsal fin. Five of these moribund fish were removed from the worst affected pen and sampled for diagnostic examination.

Externally fish 1-3 were dark in colour. Fish 4 and 5 had a dorsal lesion. Fish 1 exhibited ragged gills with white patches and fish 2 had pale and zoned gills.

Internally fish 4 had clear ascites and petechial haemorrhaging on the liver and pyloric caeca. Fish 3 had haemorrhaging on the swim bladder. Fish 1 and 5 had enlarged gall bladders. Fish 1, 3 and 5 had an enlarged spleens. None of the fish sampled had food in the gut.

Samples

Samples were collected from five fish according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
1-5	1	6	Atlantic salmon	2019 Q1 kg	Lochailort

Results

Bacteriology: Kidney and gill material from five fish and lesion material from two fish were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated from F1-5:

- *Vibrio* sp. (Isolate A): F5 (Lesion)
- *Vibrio* sp. (Isolate B): F1 (Kidney); F5 (Lesion)
- *Vibrio* sp. (Isolate C): F4 (Lesion); F5 (Kidney, lesion)
- *Vibrio* sp. (Isolate D): F4 (Lesion)
- *Yersinia ruckeri*: F3 (Kidney)

Four different *Vibrio* spp. were identified on plates taken from lesion material of fish 4 and 5. The growth was heavy, however the mixed nature would not suggest they are likely to be the primary source of morbidity.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

Salmon gill poxvirus

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.91	27.32	27.32	27.41	POSITIVE
F2	19.91	34.77	33.84	34.48	POSITIVE
F3	19.92	27.44	27.41	27.33	POSITIVE
F4	19.88	28.66	28.76	28.73	POSITIVE
F5	19.44	24.38	24.55	24.45	POSITIVE

Infectious pancreatic necrosis virus (IPNV)

Pool Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
P1	16.47	23.50	23.31	23.40	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV) and viral haemorrhagic septicaemia virus (VHSV).

Parasitology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the parasites specified below using real-time PCR (QPCR).

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	-	-	-	-	Negative
F4	-	-	-	-	Negative
F5	19.44	33.91	34.14	34.78	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.91	24.48	24.64	24.58	POSITIVE
F2	19.91	28.51	28.57	28.57	POSITIVE
F3	19.92	31.17	31.27	30.89	POSITIVE
F4	19.88	22.94	22.92	23.03	POSITIVE
F5	19.44	24.92	24.95	24.83	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from five fish. The tissue samples were fixed in 10% neutral buffered formalin.

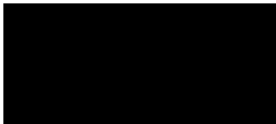
Histopathological examination revealed the following:

Observed pathology varied between individual fish. The gills of F1, F2, F4 and to a lesser extent F3 demonstrated epithelial hyperplasia and lamellar fusion with formation of 'pseudo-cysts' typical of amoeba-associated damage. No amoebic cells were observed. Multifocal haemorrhages were observed in the gills of F3 and F4 with evidence of fibrin accumulation, suggestive of healing. This telangiectasis was therefore not considered artefact, rather a pathological ante-mortem change. Epithelial lifting with proteinaceous fluid accumulation consistent with oedematous change was also observed in F2 and F3. Mucus cells of F5 were observed to contain strongly basophilic granular material.

The hepatocytes of all five fish were depleted of lipid and glycogen but active in their cell division. Multiple regions of hepatic necrosis were observed in F2, with changes consistent with those previously reported for bacterial infections such as ERM (with piscirickettsial infection also being a less likely possibility), however no bacteria were observed in H&E. Multiple discrete foci of hepatocytes with lipoproteinaceous inclusions were observed in F4 alongside hepatocellular necrosis.

Lesions to the muscle layer were observed in F4 and F5. Localised infiltration of the stratum compactum with basophilic, granular material with the appearance of bacterial plaques was present in F4. Focal myositis was noted in F5, with necrotic myofibrillar degeneration and associated phagocytic inflammatory cell infiltration. Focal vasculitis was also noted in the stratum compactum of F5. A single foci of early necrotic change was noted within the cardiomyocytes of the atrium in F3.

Signed:



Fish Health Inspector

Date: 09/04/2020

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

R09

[REDACTED]
Mowi Scotland Ltd
Stob Ban House
Glen Nevis Business Park
Fort William
PH33 6RX
[REDACTED]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0119	DATE OF VISIT	10/03/2020
SITE No	FS0015	SITE NAME	Loch Greshornish
INSPECTOR	[REDACTED]	CASE No	20200116

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, and to meet the requirements of European Community Council Directive 2006/88/EC.

All epidemiological units were inspected. Samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

The surveillance frequency category of the site was assessed as medium. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every second year. The category of the site will be reassessed on a routine basis and updated as required.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated. The following records were also inspected to ensure that the conditions of authorisation for your Aquaculture Production Business (APB) are being met:

Aquaculture animal and aquaculture animal product movement records were inspected and found to be inadequately maintained. The most recent input of lumpfish from the Republic of Ireland had not been recorded in the movement records. This has since been added and no further action is required.

Records in relation to aquaculture animals transported by the business were inspected and found to be adequately maintained.

Mortality records were inspected and found to be adequately maintained. Mortality levels had exceeded the reporting criteria since the last inspection and had been reported to the Fish Health Inspectorate as required.

Reports detailing the results of animal health surveillance carried out by or on behalf of the business and/or Marine Scotland were available for inspection.

The biosecurity measures plan for the site was inspected and found to be adequately maintained and implemented.

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

Medicine records were inspected and found to be adequately maintained.

Samples were taken to be analysed for veterinary residues.

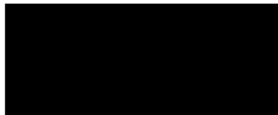
Inspection under the Aquaculture and Fisheries (Scotland) Act 2007

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice), section 4A regarding fish farm management agreements and statements and section 5 regarding containment and escapes.

On this occasion the site was found to be satisfactory with regards to parasites, fish farm management agreements and statements and containment and escapes.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:



Date: 24/03/2020

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter



