Case No: 2023-0031 Date of visit: 09/11/2023

Time spent on site: 5 Hours Main Inspector: [redacted]

Site No: FS1296 Site Name: Colonsay
Business No: FB0119 Business Name: Mowi Scotland Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 11.5 Thermometer No: T309 FHI 045 completed N/A

Observations: Region: ST Water type: S CoGP MA: None

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Site inspected following a large mortality event reported from week 41 to 43 2023. The site was inspected in a rough sea state in overcast, windy weather. All stocked pens were inspected with only 4 moribund fish observed across the whole site. The stocks were observed shoaling well and responding positively to routine feeding regimes. Two fish were displaying clinical signs of disease were captured in the mort sock which were removed for diagnostic sampling. Fish sampled for VMD appeared health both internally and externally.

Mortalites are ensiled on site during more normal levels of mortality, during the mortality event the site sought removal assistance from the Ben Mowi vessel which has an Ensiler on board.

Following the event, the sites company vet diagnosed AGD as the main driver for mortality. The site recently treated with freshwater from 09/10/2023 to 17/10/2023.

Sea lice levels were low at the time of inspection, the most recent treatments were Slice in may 2023 and AMX in July.

Case No:	2023-0031		Site No:	FS1296
Date of Visit:	09/11/2023			

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities		14	Facilities stocked	
Species	SAL			
Age group	2023 Q1			
No Fish	746,898			
Mean Fish Wt	2.4kg			
Next Fallow Date (Site)		09/2024	Next Input Dat	
Recent (last 4 wks) disease problems?			Y	
If yes, detail:	AGD			

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): Week 44 (7,639, 1.01%), W 202897)
5. Evidence of recent increased/atypical mortalities?

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

6. Any other peaks in mortality during period checked?

If yes, detail:

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

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.

Treatments and Medicines Records

1. Recent treatments (see comment)?
If yes, detail: T.M.S
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)? T.M.S
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* (*une*
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
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
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: 16/06/2022 - 0

Inspector(s): [redacted]

	Y
	N

12	No facilities inspected		14
te (Site)	03/25		
Any escapes (since last visit)?			N
			Y
		16/06/2022	
			Y
			Y
			Y
			N/A
			Y
Ensiled - on site			
			Y
Veek 43 (37,148 4.67%), Week 42 (93,576, 10.54%), Week 41 (18.6%,			
			N
			N
			N/A
			Y

	Y
	Y
	Y
	Y
	Y
explained) mortality at the site been included?	
l been included and *how* and *when* that will be notified to	
certification if required)?	
of disease been covered (movement of staff, visitors,	
held on site?	
	Y
	Y
	Y
AGD	
09/11/2023	

Case no:	2023-0031	Site No:	FS1296	Date of visit/ Sampling:	09/11/2023	09/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	12:01:00	12:32:00	Inspector:		VMD No.	15							
Environmental conditions:	1	Dry	2	Windy	3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2										
	Fish nos	1	2	3	4	5							
	Pool Group												
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	2.4kg	2.4kg	2.4kg	2.4kg	2.4kg							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)							
	Facility No	5	5	6	6	6							

11/2023 Additional Sample Information:

2 Total Tests assigned 3

Case no: 2023-0031 Site No: FS1296 Method of killing: Percussive

Date of visit: 09/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number		F1	F2								
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	Moribund	M	M								
	Lethargic	M	M								
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale	M	M								
	Zoned										
	Necrotic										
Lesions	Flank										
	Elsewhere										
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers										
Internal Signs											
Ascites	Clear										
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged		W								
	Granulomas										
Gut	No food present	M	M								
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2023-0031

Date of visit: 09/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

Site No: FS1296

Case No: 2023-0031

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0031 Date of visit: 09/11/2023

Site No: FS1296 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
AGDQ	2/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
IHNP	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
IPNM	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
ISA	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
VHS	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
PNST	2/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
SPVP	1/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
PMCV	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
SALP	0/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
AMGD	2/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
EPIT	2/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
GPAT	2/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]
LPAT	1/2	27/11/2023	[redacted]	27/11/2023	[redacted]	06/12/2023	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	06/12/2023	[redacted]	[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0119	**DATE OF VISIT**	09/11/2023
SITE NO	FS1296	**SITE NAME**	Colonsay
CASE NO	20230031	**INSPECTOR**	[redacted]

Section 1: Summary

The above site was inspected following reports of increased mortality by the farm operator. During the physical inspection of the site, two fish were removed for diagnostic sampling.

Histopathological examination revealed features consistent with mild, multifocal, hyperplasic branchitis resembling amoebic gill disease, which was confirmed by qPCR. Epitheliocystis was also observed. Hepatocellular necrosis and mild, multifocal, myocarditis.

All fish sampled tested positive for *Neoparamoeba perurans* and *Paranucleospora theridion*. One fish tested positive for salmon gill poxvirus.

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

The site was inspected following reports of increased mortality by the farm operator. At the time of visit the site was stocked with 746,898 2023 Q1 Atlantic salmon at an average weight of 2.4kg.

Between weeks 41 and 43 2023 Colonsay reported a loss of 333,621 fish during a mortality event thought to be driven by AGD. The site treated with freshwater between weeks 41 and 42 which provided a positive outcome for the stocks gill health and aided in drastically reducing mortality. At the time of inspection in week 45 mortality at Colonsay had reduced back below the reporting threshold.

During the physical inspection of the site four fish were observed as moribund and lethargic across the entire site. Two fish from pen five were able to be captured by hand net and were removed for diagnostic sampling.

Prior to removal for sampling, both fish presented moribund and lethargic. The gills of both fish were pale, both fish had no food present in the gut and F2 had a slightly enlarged spleen.

Samples

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

Fish number	Species	Stage	Origin
F1	Atlantic Salmon	2023 Q1 2.4kg	Loch Lochy (FS0150)
F2	Atlantic Salmon	2023 Q1 2.4kg	Loch Lochy (FS0150)

Results

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

No significant growth was observed.

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 (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.08	29.50	29.53	29.68	POSITIVE
F2	-	-	-	-	Negative

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV).

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	22.08	28.75	28.86	28.80	POSITIVE
F2	22.18	32.30	32.27	32.13	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.08	28.00	28.01	28.03	POSITIVE
F2	22.18	34.03	34.18	34.24	POSITIVE

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1 and F2. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplasic branchitis, mild to moderate, multifocal (F1, F2) with some lamellar vascular disturbances and cellular necrosis. Presence of several amoeboid cells resembling *Neoparamoeba perurans* observed in all fish and few basophilic epithelial inclusions (likely epitheliocystis). Aneurysmal dilation/Lamellar telangiectasia observed in all fish.

Skin & Muscle: Within normal range.

Heart: Mild, multifocal, myocarditis (F1). Mild epicarditis (F1, F2).

Gut and pyloric caeca: Within normal range.

Pancreas: Within normal range.

Liver: Hepatocellular necrosis, mild, multifocal and some inflammation (F1).

Kidney: Within normal range.

Spleen: Within normal range.

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

Signed: [redacted] Date: 06/12/2023

Fish Health Inspector

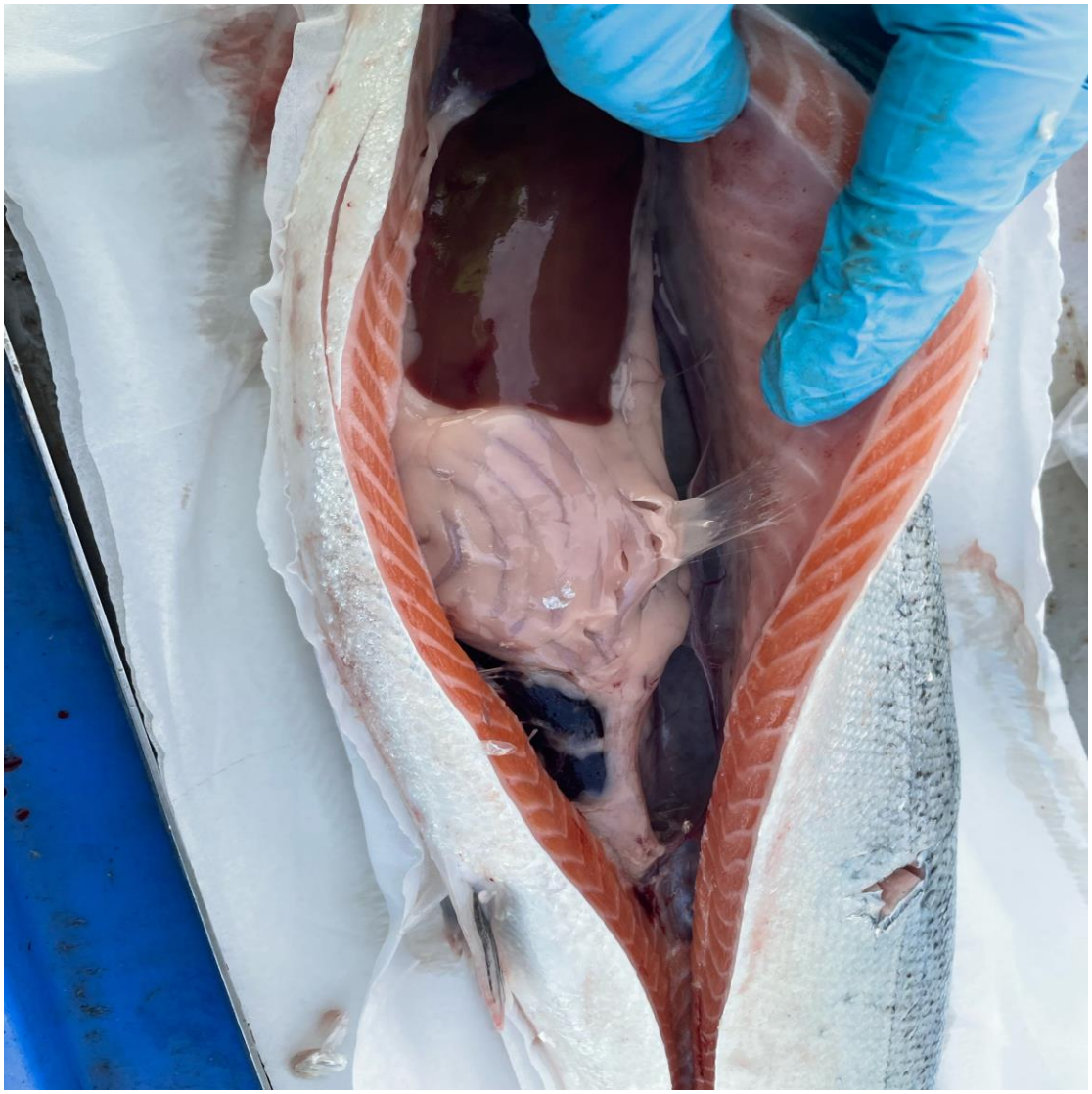
The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

UKAS accredited testing laboratory No. 1964
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

2023-0031

F1

F2



Case No: 2023-0075 Date of visit: 21/11/2023

Time spent on site: N/a Main Inspector: [redacted]

Site No: FS0403 Site Name: Meavag Hatchery
Business No: FB0449 Business Name: Meavag Fish Farming

Case Types: 1 CNA 2 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed N/A

Observations: Region: WI Water type: F CoGP MA

Dead/weak/abnormally behaving fish present?		If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?		If yes, see additional information/clinical score sheet.
Gross pathology observed?		If yes, see additional information/clinical score sheet.
Diagnostic samples taken?		

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

Site operator not able to accommodate visit.

Additional Case Information:

This site was recommended for an enhanced containment inspection following the site being assessed as unsatisfactory in regards to containment during a previous routine fish health inspection on 03/11/2023. An attempt to visit the site was made on 21/11/2023, however the site operator could not accommodate the visit. An enhanced containment inspection is to be rescheduled for early 2024.

A containment issue has been raised and recommendation provided to the farm operator to fix or replace the screened box, which is situated around the waste water pipe from the hatchery. This is necessary to meet the requirements of the Code of Good Practise, Chapter 2, 4.17 and 4.20.

Case No: 2023-0075 Site No: FS0403

Date of Visit: 21/11/2023 Inspector(s): [redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities	N/a		Facilities stocked			No facilities inspected		
Species	N/a							
Age group	N/a							
No Fish	N/a							
Mean Fish Wt	N/a							
Next Fallow Date (Site)	Unknown		Next Input Date (Site)			Unknown		
Recent (last 4 wks) disease problems?			N/A	Any escapes (since last visit)?				N/A
If yes, detail:								

Movement Records

1. Movement records available for inspection?	N/A
2. Date of last inspection:	03/10/2023
3. Are records complete and correctly entered?	N/A
4. Are movement records available for dead fish and waste?	N/A
5. Are records complete and correctly entered?	N/A
6. Are health certificates for introductions (outwith GB) available?	N/A

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?	N/A
2. How are mortalities disposed of?	
If other detail:	
3. Mortality records complete and correctly entered?	N/A
4. Recent mortality (last 4 wks):	Unknown
5. Evidence of recent increased/atypical mortalities?	N/A
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
6. Any other peaks in mortality during period checked?	N/A
If yes, detail:	
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	N/A

Treatments and Medicines Records

1. Recent treatments (see comment)?	
If yes, detail:	
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)?	
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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?	
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:	N/a

Case No: 2023-0075 Date of visit: 21/11/2023

Site No: FS0403 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
CNA	30/11/2023		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0449	**DATE OF VISIT**	21/11/2023
SITE NO	FS0403	**SITE NAME**	Meavag Hatchery
CASE NO	20230075	**INSPECTOR**	[redacted]

ENHANCED CONTAINMENT INSPECTION

An enhanced inspection to ascertain the risk of escape from the fish farm was scheduled following the recommendation after the routine fish health inspection on 03/11/2023, in accordance with the Aquaculture and Fisheries (Scotland) Act 2007.

On this occasion, the site inspection could not be conducted as there were no site representatives available. This inspection will be rescheduled for early 2024.

The following recommendation is issued in relation to:

During the routine fish health inspection conducted on 03/10/2023 an issue with the site's secondary screen integrity was observed.

It is recommended that evidence should be provided to demonstrate that the secondary screen for the site is fit for purpose and made from a suitably strong and robust material in accordance with A Code of Good Practice for Scottish Finfish Aquaculture (CoGP) (Chapter 2, section 4.19).

Please ensure that these points have been addressed by 30/01/2024. Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below). The site may be subject to further inspection or enforcement action should the appropriate action regarding the above points not be taken within the time period stipulated.

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

Signed: [redacted] Date: 30/11/2023

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No:	2023-0076	Date of visit:	21/11/2023
Time spent on site:	4 Hours	Main Inspector:	[redacted]
Site No:	FS1042	Site Name:	Seaforth
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 11.2 Thermometer No: T309 FHI 045 completed N/A

Observations: Region: WI Water type: S CoGP MA: W-6

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Site inspected in response to rapid increased mortality. Week 45 (206,563, 11.32%) and Week 46 (151,275, 8.82%). Mortality at Seaforth has been aboved the reporting threshold since week 39 2023, Mortality has been attributed to a combination of issues including AGD, PGD, treatment losses and bacterial infection.

Due to time constraints imposed by poor weather on the date of inspection, only 2 pens were inspected for clinical signs of disease. 5 fish were removed for diagnostic sampling from the two pens inspected.

From inspection of the stock, approximately 50 fish in each pen were observed as moribund and lethargic, approximately 30 fish were observed with lesions to the head and flanks. A healthy population of fish was observed shoaling in each pen.

The most recent results reported from the site company vet was on 21/11/2023 which showed positives for Pasteruella skyensis and PRV.

Treatments - Tricaine, FW 20/11/2023, Thermolicer 11/11/2023.

Cleanerfish mortality - Week 46 (0, 0%), Week 45 (1,117, 0.36%), Week 44 (3,854, 1.23%), Week 43 (2,363, 0.97%)

Case No:	2023-0076	Site No:	FS1042
Date of Visit:	21/11/2023	Inspector(s):	[redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities		10	Facilities stocked		9	No facilities inspected		2
Species	SAL	Lump						
Age group	Q1 2023	2023						
No Fish	1,034,605	301,511						
Mean Fish Wt	1.928kg	40g						
Next Fallow Date (Site)		09/2023	Next Input Date (Site)			03/2025		
Recent (last 4 wks) disease problems?			Y	Any escapes (since last visit)?				N
If yes, detail:	See additional info							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	15/02/2022
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	Y

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?	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):	Week 46 (151,275 8.82%), Week 45 (206,563, 11.32%), Week 44 (52,251, 3.94%) Week 43 (64, 751, 2.99%).
5. Evidence of recent increased/atypical mortalities?	Y

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

Mortality across the entire site has been elevated above the reporting threshold since week 39 2023. See additional info.

6. Any other peaks in mortality during period checked?	N
If yes, detail:	
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	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)?	T.M.S
If other, detail:	
6. Are medicines stored appropriately?	Y

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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?	
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?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	See additional info

Records checked between:	15/02/2022 - 21/11/2023

Case no:	2023-0076	Site No:	FS1042	Date of visit/ Sampling:	21/11/2023	21/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	14:45:00	15:45:00	Inspector:		VMD No.	6							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5							
	Fish nos	1	2	3	4	5	6	7					
	Pool Group												
Stock Details	Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL					
	Average weight	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg					
	Sex	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
	Water Type	SW	SW	SW	SW	SW	SW	SW					
	Stock Origin	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)					
	Facility No	12	12	10	10	10	10	10					

11/2023 Additional Sample Information:

5 Total Tests assigned 5

Case no: 2023-0076 Site No: FS1042 Method of killing: Percussive

Date of visit: 21/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number		F1	F2	F3	F4	F5					
Time sampled after death (if > 45 minutes)					0	15					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic					W					
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum			M		W					
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic		M								
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale	S	S	S	S	S					
	Zoned										
	Necrotic										
Lesions	Flank		W	W	M						
	Elsewhere	M				M					
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers	2	3	1	4	7					
Internal Signs											
Ascites	Clear										
	Bloody	M	W	M	M	W					
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem					M					
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	5	4	5	5	5					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem	W		W							
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged										
	Granulomas										
Gut	No food present	S	S	S	S	S					
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging			M	M						
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2023-0076

Date of visit: 21/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

Site No: FS1042

Case No: 2023-0076

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0076 Date of visit: 21/11/2023

Site No: FS1042 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
VVIS	5/5	05/01/2024	[redacted]	15/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
PSFL	4/5	05/01/2024	[redacted]	15/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
VSPE	2/5	05/01/2024	[redacted]	15/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
GPAT	5/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
KPAT	4/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
AGDQ	2/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
PNST	5/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
SPVP	5/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
ISA	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
VHS	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
IPN	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
IHN	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
PMVP	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
SAV	0/5	05/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
LPAT	5/5	17/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
HPAT	5/5	17/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
EPIT	0/5	17/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
OBAC	1/5	17/01/2024	[redacted]	15/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
CGDH	5/5	17/01/2024	[redacted]	15/12/2023	[redacted]	18/01/2023	[redacted]	[redacted]
			[redacted]		[redacted]		[redacted]	[redacted]
			[redacted]		[redacted]		[redacted]	[redacted]
			[redacted]		[redacted]		[redacted]	[redacted]
			[redacted]		[redacted]		[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA, REP	18/01/2024	[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0119	**DATE OF VISIT**	21/11/2023
SITE NO	FS1042	**SITE NAME**	Seaforth
CASE NO	20230076	**INSPECTOR**	[redacted]

Section 1: Summary

The above site was inspected following reports of increased mortality by the farm operator. During the physical inspection of the site, five fish were removed for diagnostic sampling.

Histopathological examination revealed features consistent with mild to moderate, multifocal, hyperplasic branchitis that could be potentially related to environmental insult or amoebic gill disease (AGD), however no *Neoparamoeba perurans* cells were observed.

Moritella viscosa was identified on plates taken from kidney and lesion material. The level and purity of growth of the *Moritella viscosa* isolate would suggest this bacterium would be implicated as the primary source of the lesions and as a primary fish pathogen.

Vibrio sp. was identified on plates taken from kidney material. *Pseudomonas fluorescens* was identified on plates taken from lesion material and from gill material. *Chromobacterium violaceum* was identified on plates taken from kidney material. The level and purity of growth would suggest these bacteria are present as opportunist pathogens.

Five fish tested positive for *Paranucleospora theridion* and salmon gill poxvirus (SGPV) and two fish tested positive for *Neoparamoeba perurans* by qPCR.

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

The site was inspected following reports of high mortality by the farm operator. At the time of visit the site was stocked with 1,034,605 Atlantic salmon at an average weight of 1.93kg.

The site reported significant mortality in weeks 45 (206,563, 11.32%) and 46 (151,275, 8.82%) of 2023. Mortality was attributed to a combination of factors including AGD, proliferative gill disease (PGD), treatment losses, low oxygen and bacterial infection.

On the date of inspection, the weather was poor and the sea state was rough, due to safety concerns only pens 10 and 12 were inspected for clinical signs of disease. From the physical inspection of these pens, approximately 50 fish in each pen were observed as moribund and lethargic, with most moribund and lethargic fish presenting with lesions to the flanks, operculum and around the head.

All fish sampled presented lethargic and moribund prior to removal for sampling. Externally, lice counts ranged from 1 to 7 lice per fish of all stages. F3 and F5 had some mild haemorrhaging to

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the ventrum. The eyes of F2 were exophthalmic and F5 was anorexic. All fish sampled had lesions present and the gills of all five fish sampled were pale.

Internally, all fish sampled had bloody ascites within the body cavity and no food present within the gut. F5 had petechial haemorrhaging to the liver. F3 and F4 displayed some haemorrhaging to the swim bladder and F1 and F3 had petechial haemorrhaging to the pyloric caeca.

Samples

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

Fish number	Facility number	Species	Stage	Origin
F1 – F2	12	Atlantic salmon	1.4 Kg Q1 2023	Loch Lochy (FS0150)
F3 – F5	10	Atlantic salmon	1.4 Kg Q1 2023	Loch Lochy (FS0150)

Results

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

The following bacteria were isolated:

- *Moritella viscosa* : F3 and F4 (Kidney), F1, F2, F3 and F5 (Lesion)
- *Vibrio* sp.: F1 and F2 (Kidney)
- *Pseudomonas fluorescens*: F2, F4 and F5 (Lesion), F1, F4 and F5 (Gill)
- *Chromobacterium violaceum* : F5 (Kidney)

From the tests conducted for *Moritella viscosa* we have evidence which may indicate some resistance to sulphamethoxazole/trimethoprim, however there was no evidence of resistance to amoxycillin, florfenicol or oxytetracycline.

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	19.86	22.35	22.62	22.46	POSITIVE
F2	21.25	32.42	32.96	32.73	POSITIVE
F3	20.10	22.89	22.89	22.95	POSITIVE
F4	20.12	23.76	23.76	23.75	POSITIVE
F5	20.96	28.12	28.14	28.16	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV).

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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	19.86	34.09	35.26	35.26	POSITIVE
F2	-	-	-	-	negative
F3	-	-	-	-	negative
F4	-	-	-	-	negative
F5	20.96	35.38	34.93	37.20	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.86	29.60	29.74	29.51	POSITIVE
F2	21.25	31.40	31.20	31.18	POSITIVE
F3	20.10	30.03	30.10	29.75	POSITIVE
F4	20.12	31.65	29.12	31.67	POSITIVE
F5	20.96	31.42	31.39	31.39	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen, kidney were taken from F1 – F5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplasic branchitis, mild, multifocal (F1-F5) with areas of cellular necrosis (F3) and vascular disturbance (F1). F3 also displayed lamellar adhesions and areas of haemorrhage. F1 and F3 showed few apoptotic cells shedding off potentially associated with gill poxvirus. Presence of few basophilic epithelial inclusions (likely epitheliocystis) F1- F5. Lamellar telangiectasia (F4).

Skin & Muscle: Within normal range.

Heart: Minor to mild, multifocal, myocarditis (F2, F3). Mild epicarditis (F4, F5). Thrombi (F1, F5). Minor areas of light H&E stain observed in the compact layer (F5).

Gut and pyloric caeca: Some peritonitis (F3).

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, mild, multifocal (F1, F3, F4), some cuffing (F2, F5) and sinusoidal infiltration (F2).
Kidney: Interstitial cell (haemopoietic) necrosis, mild, multifocal with circulating inflammatory cells (F1, F3-F4) and some congested glomeruli (F5).

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Spleen: Some cuffing (F1).

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

Signed: [redacted] Date: 12/01/2024

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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FS1042 / FB0119 – Seaforth – 2023-0076

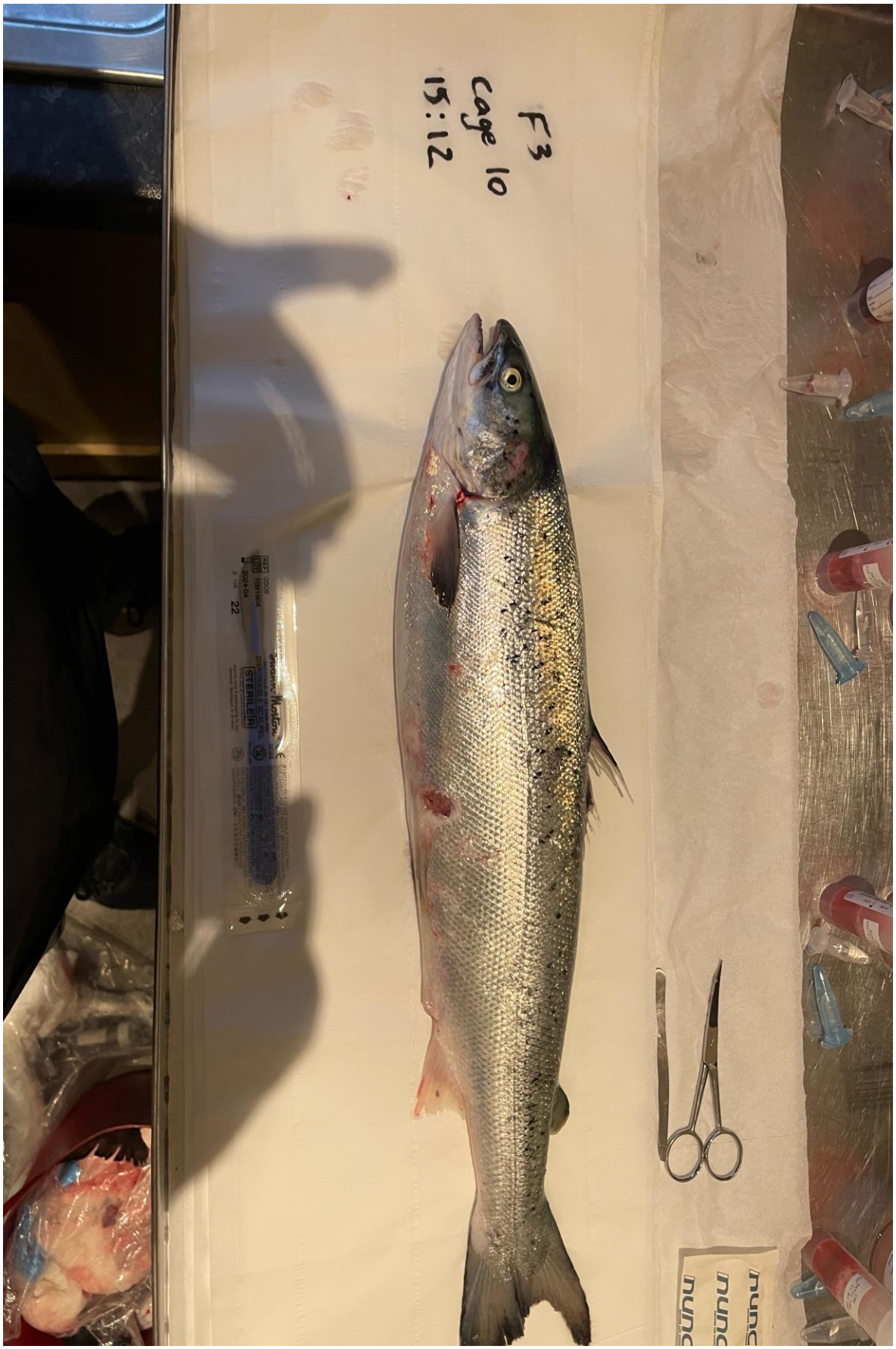
F1

F2

F4

FG

F3



F5

Case No: 2023-0087 Date of visit: 22/11/2023

Time spent on site: 1.5 Hours Main Inspector: [redacted]

Site No: FS0843 Site Name: Evanachan Marine Hatchery
Business No: FB0012 Business Name: Otter Ferry Seafish Ltd

Case Types: 1 MOV 2 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed

Observations: Region: ST Water type: S CoGP MA: M-42

Dead/weak/abnormally behaving fish present?	N	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	N	If yes, see additional information/clinical score sheet.
Gross pathology observed?	N	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	N	

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

Additional Case Information:

Export inspection carried out for consignments of 20,000 halibut juveniles to Canada.

Movement document MS/2023/0051 signed.

Case No: 2023-0087 Date of visit: 22/11/2023

Site No: FS0843 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
			[redacted]		[redacted]		[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
MOV	14/02/2024	[redacted]	[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0012	**DATE OF VISIT**	22/11/2023
SITE NO	FS0843	**SITE NAME**	Evanachan Marine Hatchery
CASE NO	20230087	**INSPECTOR**	[redacted]

Inspection for export

The above site was visited and a consignment of juvenile halibut for export to Canada was inspected. A health certificate was issued which must travel with the consignment to the destination.

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

Signed: [redacted] Date: 14/02/2024

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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Case No: 2023-0511 Date of visit: 03/11/2023

Time spent on site: 7 Hours Main Inspector: [redacted]

Site No: FS1056 Site Name: Strone
Business No: FB0169 Business Name: Bakkafrost Scotland

Case Types: 1 ECI 2 CNI 3 SLI 4 VMD 5 DIA 6

Water Temp (°C): 11.6 Thermometer No: T309 FHI 045 completed N/A

Observations: Region: ST Water type: S CoGP MA M-45

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Site inspection and paperwork conducted by [redacted], observed by [redacted] & UKAS auditors.

The site is stocked with 14 pens of 2023 Q1 SAL, stocked from Applecross (FS1336), Loch Langavat (FS0149), Hebridean Smolts (FS0394) and Ormsary Hatchery (FS0575). The site is also stocked with a mix of wild caught ballan wrasse (Scotland) and farmed wrasse from Otterferry (FS0001).

Pen numbers and stock origin : Applecross - 1, 10,11 & 14. Loch Langavat - 2,3,4,5 & 6. Hebridean smolt - 7,8 & 9. Ormsary - 12 & 13.

Cleanerfish mortality - Week 44 (150, 0.27%), Week 43 (167, 0.30%), Week 42 (42, 0.08%), Week 41 (633, 1.13%)

Cleanerfish peaks in mortality : Week 15 (1.75%), Week 17 (3.63%). Mortality events associated with failures post input.

A period of low level mortality occurred onsite between weeks 35 and 41 of 2023. The site reported mortality just above the 1% reporting level to the FHI in week 37,38 and 39.

Through routine fish health checks the site identified a mild bacterial infection throughout Q3 of 2023 which seems to be now resolving. The bacterial infections appear to be secondary to other insults, it is thought that low O2 in Loch Striven has resulted in a poor immune response in fish which has allowed a mixed bag of furunculosis and SRS to present in outlier fish. Last fish health report dated 25/10/2023.

The site was inspected in a calm sea state in overcast weather. Visibility allowed observation of the stocks to approximately 3 meters. The majority of the stock observed appeared healthy, the general population of fish observed across all cages could be seen shoaling well and responding positively hand feeding by the site operator, which was observed when capturing fish for VMD sampling.

Clinical signs of disease were observed during this visit and four fish were removed for diagnostic sampling. Across the site, evidence of bacterial infection was clear as many fish were observed with small, circular lesions. Of the 14 cages stocked, approximately 3 to 15 moribund and lethargic fish were observed in each pen. Pen 14 had the largest number of moribunds observed at approximaly 15, 2 fish were observed hanging vertically, 6 fish were observed having a darkened body and exophalmia. All moribund fish observed had small circular lesions present. Clinical signs of disease were similar in each cage across the site in varying degrees of severity.

Fish were removed for diagnostic sampling from pens 14, 3 and 2 which appeared to be the worst affected cages based on the visible clinical signs of disease observed during the inspection.

An additional 9 fish were removed for VMD sampling, 6 of these fish had a few small circular lesions although appeared to be otherwise healthy. No gross pathology was observed.

The site conducted a round of freshwater treatments in week 41. At the time of inspection the stock were in withdrawal of SLICE and Optomease.

Case No:	2023-0511	Site No:	FS1056
Date of Visit:	03/11/2023	Inspector(s):	[redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities	14	Facilities stocked	14	No facilities inspected	14		
Species	SAL	WRS					
Age group	2023 Q1	2023					
No Fish	972,558	54,901					
Mean Fish Wt	1517g	150g					
Next Fallow Date (Site)	07/2024	Next Input Date (Site)	01/2025				
Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	N				
If yes, detail:	Furunculosis, SRS, AGD						

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	04/11/2021
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

Transport Records

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

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):	Week 44 (4,024, 0.41%), Week 43 (8,767, 0.89%), Week 42 (7,114, 0.72%), Week 41 (8,593, 0.86%)
5. Evidence of recent increased/atypical mortalities?	Y

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

Cage 11 (9.95%, 9,765), Cage 12 (10,777, 9.08%) Week 35 to Week 41.

6. Any other peaks in mortality during period checked?	Y
If yes, detail:	See additional information (cleanerfish).
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	Optomease
If other, detail:	SLICE
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)?	Optomease
If other, detail:	SLICE
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	Y
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 been included and *how* and *when* that will be notified to Scottish Ministers?	Y
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	Y
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	Y
8. Have the biosecurity procedures been adequately implemented on site?	Y
If no, detail:	

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	

See additional information.

Records checked between: 04/11/2021 - 03/11/2023

Case no:	2023-0511	Site No:	FS1056	Date of visit/ Sampling:	03/11/2023	03/							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	13:25:00	14:30:00	Inspector:		VMD No.	20							
Environmental conditions:	1	Dry	2	Cloudy	3	Windy	4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	P1							
	Fish nos	1	2	3	4	1-5							
	Pool Group	P1	P1	P1	P1								
Stock Details	Species	SAL	SAL	SAL	SAL								
	Average weight	1.5kg	1.5kg	1.5kg	1.5kg								
	Sex	N/a	N/a	N/a	N/a								
	Water Type	SW	SW	SW	SW								
	Stock Origin	Loch Langavat (FS1049)	Loch Langavat (FS1049)	Applecross (FS1336)	Applecross (FS1336)								
	Facility No	2	3	14	14								

11/2023 Additional Sample Information:

5 Total Tests assigned 4

Case no: 2023-0511 Site No: FS1056 Method of killing: Anaesthetic

Date of visit: 03/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number											
Time sampled after death (if > 45 minutes)		5	15	25	35						
External Signs											
Behaviour	**Moribund**	S	S	S	S						
	Lethargic	S	S	S	S						
	Hanging vertical			W	W						
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**	W		M	M						
	Distended abdomen				W						
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**		W								
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**				M						
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**	M	M	M	M						
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**	0	0	0	0						
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**				M						
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	4	5	4	4						
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**	W									
	Tubules mauve										
	Lack of fat	W	W	W	W						
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**	W	W	W							
	Yellow pseudo-faeces				M						
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**			M							
	Fluid filled		W								
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Case no: 2023-0511

Date of visit: 03/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

Heart of F4 was abnormally brittle, bulbous came apart during removal from fish.

Case Number:	2023-0511		Site No:	FS1056	Insp:	
Date of Visit	03/11/2023		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	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	0
	Number of suppliers	0	5	10	14	0
Movements off	Frequency of movements off	0	3	6	10	6
	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	2
	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	1

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	
	Common processes with other farms	3	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	1
	Sites sharing staff and equipment	0	1	2	1

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	17
Rank	MEDIUM

Case No: 2023-0511 Site No: FS1056

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	N
2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?	Y
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?	Y
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?	Y
5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)	Y
6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)	Y
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)	Y
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?	N
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.	N/A
9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)	N
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)	N/A
11. Has any other action been taken (where applicable)?	N/A
12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?	N/A
13. Are treatments, where conducted, carried out in cooperation between participating farms?	Y
14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?	Y
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?	Y
16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.	Y

Containment Inspection

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

Seal pro nets, tops 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?	N
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)	Y

Case No: 2023-0511 Site No: FS1056

Date of Visit: 03/11/2023 Inspector: [redacted]

Point of Compliance

1. Is the farm under inspection located within a farm management area? If N, no further questions require completion.	Y

Points of Compliance for Both Farm Management Agreements and Statements

2. Has a current farm management agreement or statement (FMAg/S) been prepared?	Y
3. Is the current FMAg/S available for inspection?	Y
4. Does the FMAg/S identify the relevant farm management area?	Y
5. Does the FMAg/S identify the fish farm site(s) to which it applies?	Y
6. Does the FMAg/S identify the date of commencement of the agreement or statement?	Y
7. Does the FMAg/S identify the date of review?	Y

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?	Y
9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?	Y
10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?	Y
11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?	Y
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?	Y

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?	Y
14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?	Y
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?	Y
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?	Y
17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?	Y

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?	Y
19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?	Y

Harvesting

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

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?	Y
22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?	Y
23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?	Y

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?	N/A

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?	Y
26. What is the version no/date of issue of the FMAg/S?	09/02/2023

Site No: FS1056

Case No: 2023-0511

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0511 Date of visit: 03/11/2023

Site No: FS1056 Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
ISA	1/4	07/11/2023		07/11/2023		07/12/2023		
ASAL	1/4	15/11/2023		28/11/2023		07/12/2023		
AGDQ	2/3	15/11/2023		28/11/2023		07/12/2023		
IPNM	2/4	15/11/2023		28/11/2023		07/12/2023		
IHNP	0/4	15/11/2023		28/11/2023		07/12/2023		
PNST	3/3	15/11/2023		28/11/2023		07/12/2023		
VSPE (A)	2/4	15/11/2023		28/11/2023		07/12/2023		
VSPE (B)	2/4	15/11/2023		28/11/2023		07/12/2023		
YRUK	4/4	15/11/2023		28/11/2023		07/12/2023		
PMVP	0/4	15/11/2023		28/11/2023		07/12/2023		
SALP	0/4	15/11/2023		28/11/2023		07/12/2023		
VHSP	0/4	15/11/2023		28/11/2023		07/12/2023		
PISM	2/2	15/11/2023		28/11/2023		07/12/2023		
AERH	1/4	15/11/2023		28/11/2023		07/12/2023		
GPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
HPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
LPAT	3/4	15/11/2023		28/11/2023		07/12/2023		
KPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
SPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
PISH	1/4	15/11/2023		28/11/2023		07/12/2023		

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI, SLI, CNI, VMD	07/11/2023		
DIA	29/11/2023		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	03/11/2023
SITE NO	FS1056	**SITE NAME**	Strone
CASE NO	20230511	**INSPECTOR**	[redacted]

Section 1: Summary

During a routine fish health inspection of the site, fish were observed displaying clinical signs of disease. Four fish were removed for diagnostic sampling.

One fish tested positive for infectious salmon anaemia (ISAV) by qPCR. Further tests were run to determine the HPR subtype, however no results could be obtained from sequencing as only a poor quality product was collected due to a high Cp value. Following this outcome, the site was scheduled for a 150 fish statutory sample for ISA. These samples determined the subtype as HPR0, please refer to the reports for case 2023-0524 for more detailed information.

Histopathology examination revealed complex pathology. There was pathology consistent with salmonid rickettsial septicaemia (SRS), which was confirmed by qPCR, and one fish also displayed an Aeromonas-like infection.

Yersinia ruckeri was identified, however the level and purity of growth would not suggest it would be the primary source of morbidity in this case. *Aeromonas salmonicida* was identified in one fish, the level and purity of growth would suggest it would be the primary pathogen in this fish.

F1-F3 tested positive for *Paranucleospora theridion* and salmon gill poxvirus (SGPV). One fish tested positive for *Neoparamoeba perurans* (AGD) and two fish tested positive for infectious pancreatic necrosis virus (IPNV) by qPCR.

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

During a routine fish health inspection of the site, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, clinical signs of disease were observed upon inspection of the stocks. Across the site moribund and lethargic fish were observed in each epidemiological unit. Pen 14 had the largest number of moribund and lethargic fish visible at approximately 15, of the fish observed, two fish in this pen were hanging vertically, six fish had exophthalmia and were dark to the body. All moribund fish had small circular lesions to the flanks. Clinical signs of disease were similar and apparent in every stocked pen in varying degrees of severity. Four fish were removed for diagnostic sampling, taken from cages 2, 3 and 14.

The fish removed for diagnostic sampling all displayed moribund and lethargic behaviour prior to removal for sampling. F3 and F4 were also observed hanging vertically prior to removal. F4 was dark to the body and its eyes were exophthalmic. All fish had small circular lesions present to the flanks.

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Internally, all fish had a lack of fat to the pyloric caeca and no food present in the gut. F4 had a pale and anaemic heart. Haemorrhaging to the swim bladder was observed in F3 and the swim bladder of F2 was fluid filled.

Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	2	Atlantic Salmon	2023 Q1 1.5Kg	Loch Langavat (FS1049)
F2	3	Atlantic Salmon	2023 Q1 1.5Kg	Loch Langavat (FS1049)
F3 – F4	14	Atlantic Salmon	2023 Q1 1.5Kg	Applecross (FS1336)

Results

Bacteriology: Kidney, gill and lesion material from four fish was inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

- *Yersinia ruckeri* : F3 & F4 (Kidney), F1, F2 & F4 (Lesion)
- *Aeromonas salmonicida* : F1 (Kidney)
- *Vibrio* spp: F1, F2 & F3 (Lesion), F2 (Kidney)

Yersinia ruckeri is a primary fish pathogen, however the level and purity of growth overall would not suggest it would be the primary source of morbidity in this case, but it would be implicated as a secondary pathogen in individual fish and may pose a risk to the health of the population. The level and purity of growth of *Aeromonas salmonicida* found in F1 would suggest that it would be the primary pathogen in this fish. The level and purity of *Vibrio* spp. identified would not be implicated in morbidity and are likely to be of environmental origin.

Tissue samples of F2 and F3 were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (qPCR).

Piscirickettsia salmonis

Fish Number	**Endogenous control Cp value**	**Cp Values**			**Reported Result (PCR)**
F2	23.51	25.76	25.68	25.76	POSITIVE
F3	21.95	32.81	32.81	32.79	POSITIVE

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

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Website - https://www.gov.scot/policies/fish-health-inspectorate/

Infectious salmon anaemia (ISAV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	16.71	>40	>40	>40	POSITIVE
F4	-	-	-	-	Negative

Infectious pancreatic necrosis virus (IPNV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	16.71	34.75	34.69	34.25	POSITIVE
F4	17.26	38.06	37.43	37.81	POSITIVE

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.85	33.09	33.91	33.63	POSITIVE
F2	23.17	28.75	28.70	28.69	POSITIVE
F3	21.66	37.04	37.36	39.17	POSITIVE

F1 – F3 tested for salmon gill poxvirus(SGPV)

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV).

Parasitology: Tissue samples from F1 – F3 were tested for segments of nucleic acid indicative of the presence of the parasites specified below using real-time PCR (qPCR).

Paranucleospora theridion

Fish Number	***Endogenous control Cp value***	***Cp Values***			***Reported Result (PCR)***
F1	22.85	25.78	25.89	25.92	POSITIVE
F2	23.17	28.86	28.42	28.40	POSITIVE
F3	21.66	32.10	32.23	32.16	POSITIVE

Neoparamoeba perurans (AGD)

Fish Number	***Endogenous control Cp value***	***Cp Values***			***Reported Result (PCR)***
F1	23.17	34.92	34.92	35.25	POSITIVE
F2	-	-	-	-	Negative
F3	21.66	32.53	32.78	32.92	POSITIVE

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

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

Histopathological examination revealed the following:

Gill: Focal area of filament necrosis with of few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F3). Several aggregates of Gram-negative bacteria with no evident necrosis associated (F1). F4 also displayed some vascular disturbance and adhesions. Lamellar telangiectasia with multifocal thrombosis (F1, F2, F3, F3) and free blood among gill filaments.

Skin & Muscle: Small area of necrotising myositis with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1). F2 displayed minor myositis.

Heart: Mild, multifocal myocarditis (F1, F4). Moderate, epicarditis with round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1). F3 displayed focal epicarditis and some basophilic cellularity in the compact layer. Patches of light H&E stain observed in the compact layer (F1). F4 displayed some granulomatous reaction with some structures showed centrally splendore-hoeppli reaction (homogeneous eosinophilic material).

Gut and pyloric caeca: Peritonitis, mild, multifocal (F1, F2, F3, F4) and a presence of a range of quantity of round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2).

Pancreas: Within the normal range.

Liver: Capsulitis (F1, F2) with rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2). Hepatocellular necrosis, minimal, focal with few rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and F2 with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.). F4 displayed some cuffing.

Kidney: Interstitial cell (haemopoietic) necrosis (F1, F2, F3) with rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and few intracellular round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2). F1 also displayed haemorrhage. Some renal tubules display some hyaline droplets (F2). F3 displayed on renal tubule with evidence of mineralization. F4 displayed some granulomatous reaction with some structures showed centrally splendore-hoeppli reaction (homogeneous eosinophilic material) and evidence of erythrophagocytosis.

Spleen: Necrotising capsulitis (F1) with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1) and presence of few rod-shaped bacteria (resembling *Aeromonas* sp.) observed in the parenchyma (F1). F2 displayed with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) and F3 exhibited

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

Signed: [redacted] Date: 06/12/2023

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	03/11/2023
SITE NO	FS1056	**SITE NAME**	Strone
CASE NO	20230511	**INSPECTOR**	[redacted]

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected in accordance with the Aquatic Animal Health (Scotland) Regulations 2009.

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 appeared to be adequately maintained.

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 Directorate were available for inspection.

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

UKAS accredited testing laboratory No. 1964
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

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: 07/11/2023

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

AFH-2023-0511 Strone, Bakkafrost Scotland (4 fish Diagnostic)

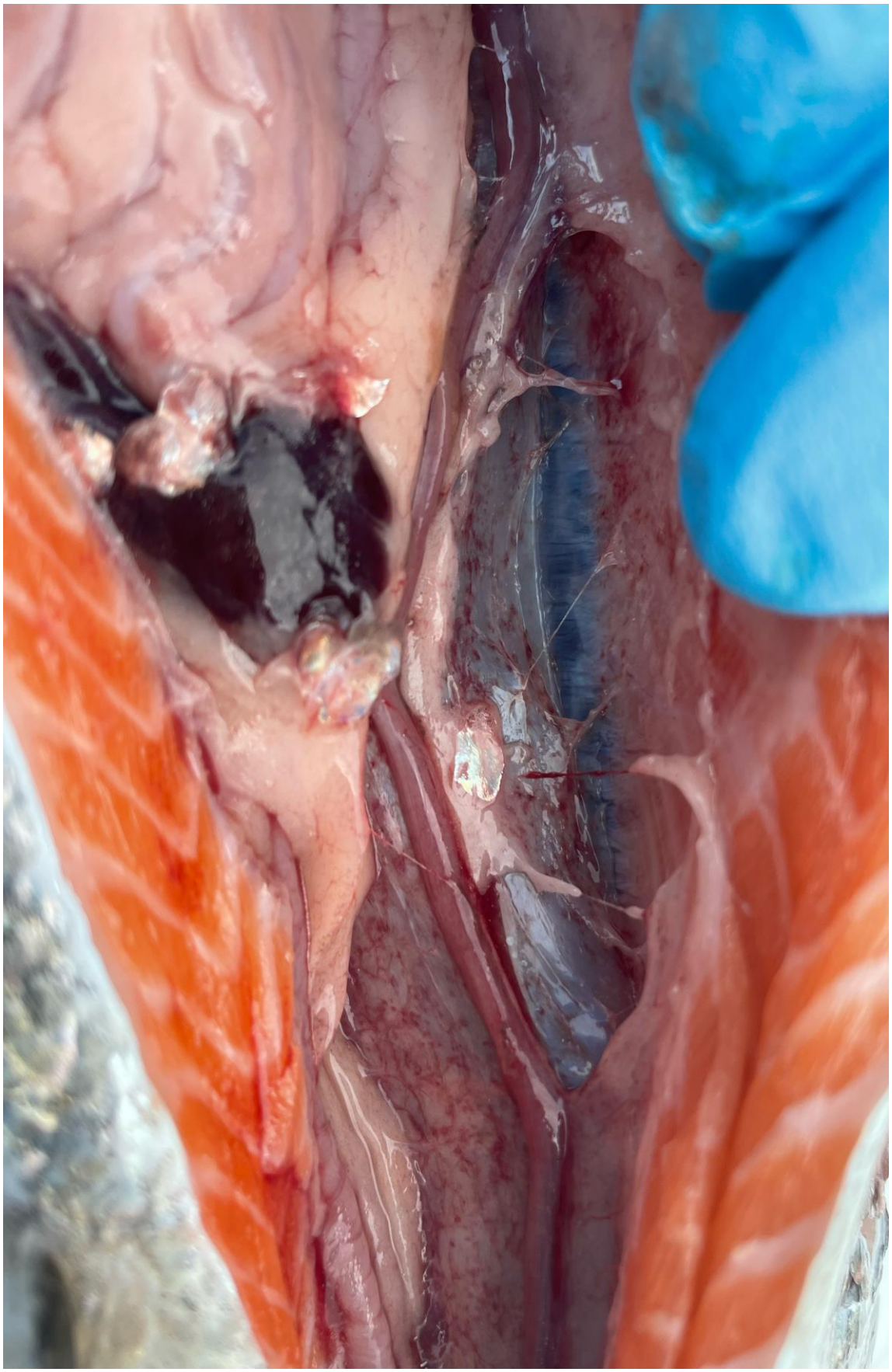
F1


Formalin | 120ml
IVD

F2

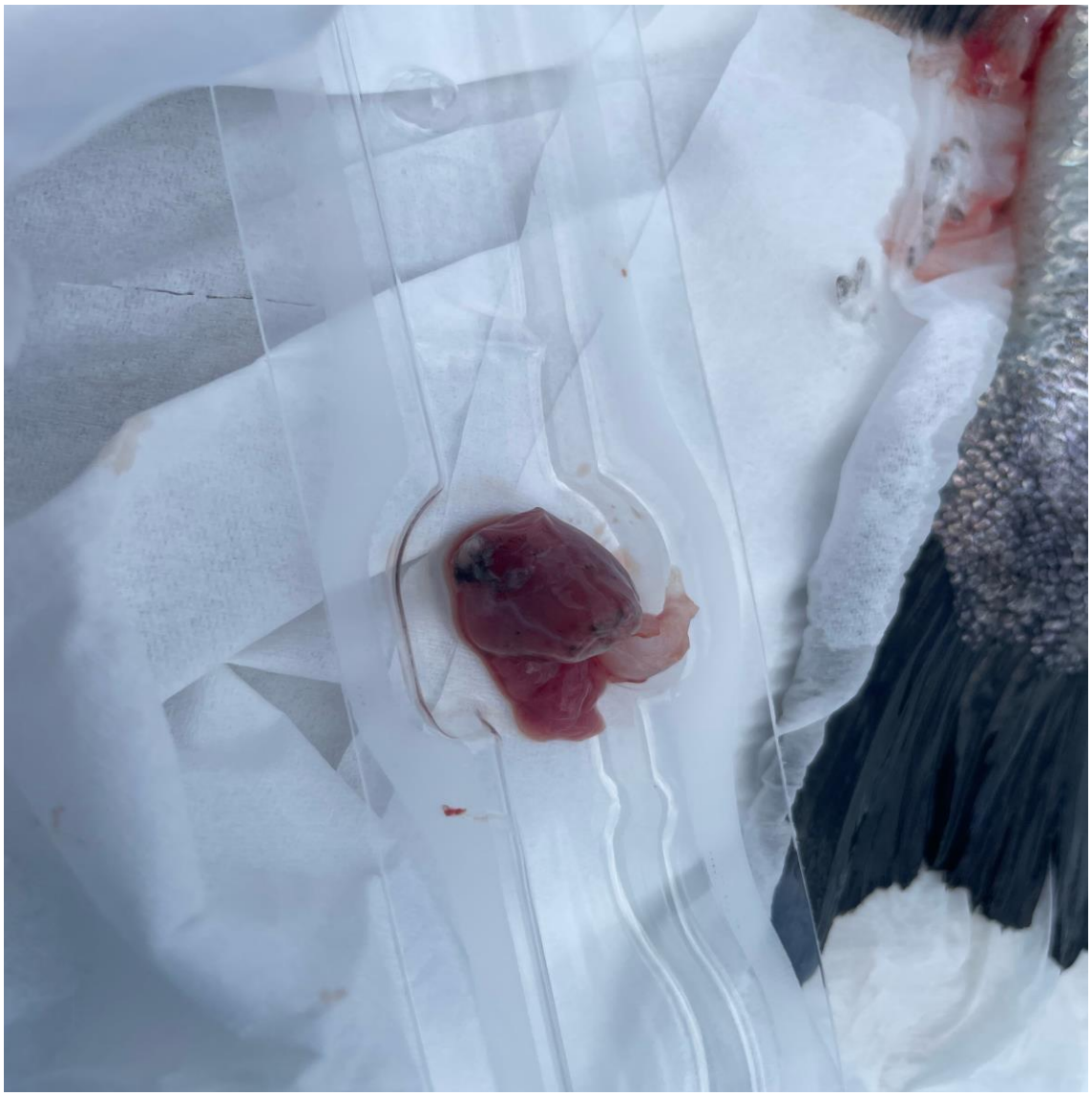
F2
C3
13:49
ID: 12,35
Swann-Morton
DISPOSABLE SCALPEL
STERILE
REF 0508
LOT 608221O
2027-10
1:283
22

F3



F4


F4
14:15
13:50
TD
C14
RADIATION STERILIZED
MADE IN DENMARK
RADIATION STERILIZED
10 µL BLUE BLEU
1 µL CLEAR
DISPOSABLE
F-4
F4



Case No: 2023-0528 Date of visit: 28/11/2023

Time spent on site: 5.5hrs Main Inspector: [redacted]

Site No: FS0209 Site Name: Scallastle
Business No: FB0125 Business Name: Scottish Sea Farms Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 11.3 Thermometer No: T309 FHI 045 completed

Observations: Region: ST Water type: S CoGP MA M-35

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Salmon came on from Barcaldine Smolt Unit (FS1328) and had been performing well this cycle with good appetite and growth recorded across all cages. However, in late October, Storm Babet passed through the site with a strong easterly wind for 3 consecutive days. A sharp decline in appetite was observed across the inshore cages (1-8). AGD, PGD, bacterial infections (SRS and Furunculosis) and PMCV had been detected on site. The upwell of sediment and debris during the storm agitated the gills and subsequently resulted in an increase in mortalities across the site in wks42 and 43.

Cage 5 underwent a peroxide treatment 2 weeks ago following the period of bad weather. The peroxide treatment, combined with the health issues on site and poor environmental conditions, a significant mortality event occurred the following week (wk45), with most of the mortalities on site originating from cage 5.

Cages 1-8 were FW treated last week (wk46) for 4hrs. Appetite is still below expected levels, but mortality has dropped significantly from the previous week, although remains above the reporting threshold.

A slice tretament was completed in June this year, but since then, only FW treatments and one peroxide treatment have been completed.

Wildcaught wrasse from Skye and Orkney are also stocked on site. Mortality for the wrasse since the last inspection was: Wk42 2023: 1.61%, Wk43: 8.06%, wk44: 11.45%, wk45: 21.13%, wk46: 8.85%

Company vets last visited the site on 17/10/23. Swim bladders were pink in colour, consistent with furunculosis and external lesions consistant with SRS. Pale gills were observed on most fish. Full health checks will be completed tomorrow and will include bloods, gill swabs, kidney swabs, histology samples and samples for PCR. Site is currently feeding a Biomar skin assist diet.

A FW wellboat was on site during the inspection and was on the last cage. The entire site had been FW treated over the last 2 week period. The crowd was calm and controlled. An aerator was also present.

The general population of fish across the site appeared in good body condition but were lethargic. Several lethargic and moribund fish were observed near the surface in all cages, some with lesions and physical damage to varying extents. These fish were removed and humanely dispatched. Five of these fish were sampled for diagnostics.

It is worth noting that site staff had already been around the site in the morning to remove moribund fish.

Inspection and paperwork completed by [redacted], observed by [redacted]

Case No: 2023-0528 Site No: FS0209

Date of Visit: 28/11/2023 Inspector(s): [redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities	16	Facilities stocked		15	No facilities inspected		16
Species	SAL	WRA					
Age group	23 Q1	Wildcaught					
No Fish	434,470	21,000					
Mean Fish Wt	2.6kg	145g					
Next Fallow Date (Site)	August 24		Next Input Date (Site)		January 25		
Recent (last 4 wks) disease problems?		Y	Any escapes (since last visit)?				N
If yes, detail:	See additional information.						

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	19/04/2023
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

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?	Y
2. How are mortalities disposed of?	Biogas - Barkip
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	WK43 2023: 25,960 (4%), WK44: 29,662 (5.6%), Wk45: 49,624 (9.9%), Wk46: 17,813 (3.9%) and wk47: 12,248 (2.8%).
5. Evidence of recent increased/atypical mortalities?	Y

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

Attributed to a combination of health challenges on site: SRS, Furunculosis, AGD, PGD and PMCV

6. Any other peaks in mortality during period checked?	N
If yes, detail:	
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	Optomease Peroxide
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?	N
5. If yes, what treatment(s)?	
If other, detail:	
6. Are medicines stored appropriately?	Y

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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?	
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?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	PMCV, Furunculosis and SRS detected on site.

Report dated: 06/11/2023.

Records checked between: 19/04/2023 - 23/11/23

Case no:	2023-0528	Site No:	FS0209	Date of visit/ Sampling:	28/11/2023	28/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	15:00:00	16:30:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5							
	Fish nos	1	2	3	4	5							
	Pool Group	P1	P2	P3	P4	P5							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	2.6kg	2.6kg	2.6kg	2.6kg	2.6kg							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328							
	Facility No	6	1	2	3	7							

11/2023 Additional Sample Information:

Fish humanely dispatched by percussive blow.

5 Total Tests assigned 4

Case no: 2023-0528 Site No: FS0209 Method of killing: Percussive

Date of visit: 28/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number											
Time sampled after death (if > 45 minutes)		45mins	60mins	75mins	90mins	105min					
External Signs											
Behaviour	**Moribund**	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**	W		W	W	W					
	Ventrum	W	W	W	W						
	Base of fins										
	Elsewhere	W				W					
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**	S	S	S	S	S					
	Zoned										
	Necrotic	W	M		M	W					
Lesions	**Flank**				S						
	Elsewhere					M					
Vent	**Inflamed**	W		W	M	W					
	Trailing faeces										
Lice Load	**Estimate numbers**	0	0	0	0	0					
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**	S	S	S	S	S					
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged			W	M	W					
	Colour number(s)	3	5	4	3	2					
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**				M						
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**	M		W	W	M					
	Granulomas										
Gut	**No food present**			W							
	Yellow pseudo-faeces	M	M		W	W					
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**	W		W							
Swim bladder	**Haemorrhaging**	W		M							
	Fluid filled										
Kidney	**Swollen**										
	Grey	W	W	W	W	W					
	Granular										
	Liquefied					W					
General	**Parasites present**										
	Anaemia	S	S	S	S	S					

Case no: 2023-0528

Date of visit: 28/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

F4 - fluid filled sac attached to the heart. The left eye had popped and the right eye was completely absent.

Case No: 2023-0528 Date of visit: 28/11/2023

Site No: FS0209 Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG_IHN	0/5	07/12/2023		07/12/2023		23/01/2024		
MG_ISA	1/5	07/12/2023		07/12/2023		23/01/2024		
MG_VHS	0/5	07/12/2023		07/12/2023		23/01/2024		
MG_AGD	5/5	11/12/2023		11/12/2023		23/01/2024		
MG_SAL_POX	5/5	11/12/2023		11/12/2023		23/01/2024		
Sequencing - HPR0	1/5	11/12/2023		11/12/2023		23/01/2024		
MG_PARA_THER	5/5	12/12/2023		12/12/2023		23/01/2024		
MG_IPN	0/5	12/12/2023		12/12/2023		23/01/2024		
MG_PMCV	2/5	12/12/2023		12/12/2023		23/01/2024		
MG_SAV	0/5	12/12/2023		12/12/2023		23/01/2024		
YRUK	2/5	15/12/2023		15/12/2023		23/01/2024		
VSPE	1/5	15/12/2023		15/12/2023		23/01/2024		
VSPE	2/5	15/12/2023		15/12/2023		23/01/2024		
VVIS	1/5	15/12/2023		15/12/2023		23/01/2024		
AMGD	3/5	15/01/2024		16/01/2024		23/01/2024		
GPAT	4/5	15/01/2024		16/01/2024		23/01/2024		
SPAT	4/5	15/01/2024		16/01/2024		23/01/2024		
KPAT	4/5	15/01/2024		16/01/2024		23/01/2024		
LPAT	3/5	15/01/2024		16/01/2024		23/01/2024		

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA, REP	23/01/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0125	**DATE OF VISIT**	28/11/2023
SITE NO	FS0209	**SITE NAME**	Scallastle
CASE NO	20230528	**INSPECTOR**	[redacted]

Section 1: Summary

The site was inspected due to recent mortality reports above the reporting threshold, all attributed to poor gill health, cardiomyopathy syndrome (CMS) and bacterial infections (*Piscirickettsia salmonis* (salmon rickettsial syndrome (SRS)) and *Aeromonas salmonicida* (furunculosis)). Five fish were selected for diagnostic sampling.

Samples were screened for infectious salmon anaemia virus (ISAV) by QPCR as part of the surveillance program for the control of listed diseases. The samples tested positive for infectious salmon anaemia virus (ISAV) by QPCR (Cp levels 38-40) and the sequence data confirmed the presence of ISAV HPR0, the non-pathogenic form of the virus. In relation to the ISAV HPR0 result obtained, along with the observations made on site, no further statutory action is required to be taken in this case, ISAV HPR0 not being a disease listed in The Aquatic Animal Health (Scotland) Regulations 2009.

Histopathology examination revealed multifocal splenitis, nephritis potentially associated with Gram-negative bacterial infection (likely *Aeromonas* sp.) and mild myocarditis which could be related to the presence of piscine myocarditis virus (PMCV), confirmed by qPCR. Mild, multifocal, amoebic gill disease was observed. *Neoparamoeba perurans, Paranucleospora theridion* and Salmon gill poxvirus (SGPV) were all confirmed by qPCR.

Yersinia ruckeri, Moritella viscosa and two species of *Vibrio* were identified. The level and purity of growth would suggest that these primary fish pathogens were implicated in morbidity.

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

Scallastle was inspected due to recent, consecutive mortality reports above the reporting criteria, all attributed to poor gill health, CMS and bacterial infections, which resulted in the loss of 135,307 fish in the 5-week period prior to the inspection. At the time of inspection, the site was stocked with 434,470 Q1 Atlantic salmon at an average weight of 2.6kg originating from the Barcaldine Smolt Unit (FS1328). All cages were inspected and the general population of fish across the site appeared in good body condition but were lethargic. Several lethargic and moribund fish were observed near the surface in all cages, some with skin lesions and physical damage to varying extents. These fish were removed and humanely dispatched. Five of these fish were sampled for diagnostics.

Externally, haemorrhaging was observed along the throat of F1, F3-5, along the ventrum of F1-4 and elsewhere on F1 and F5. The left eye of F4 had burst and the right eye was completely absent. The gills of all five fish were pale/anaemic and necrosis of the gills was noted in F1-2 and F4-5. Skin and muscle lesions were observed on the flank of F4 and elsewhere on F5.

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Website - https://www.gov.scot/policies/fish-health-inspectorate/

Inflammation of the vent was observed on F1 and F3-5. No sea lice were observed on any of the five fish. Internally, the hearts of all five fish were pale/anaemic and the liver was enlarged in F3-5. Petechial haemorrhaging was observed on the pyloric caeca of F4 and the spleen was also enlarged in F1 and F3-5. Yellow pseudo-faeces were present in the guts of F1-2 and F4-5. Haemorrhaging was observed in the body wall and in the swim bladder of F1 and F3. The kidney was slightly grey in colour in all five fish and was mildly liquefied in F5.

Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	6	Atlantic salmon (*Salmo salar*)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F2	1	Atlantic salmon (*Salmo salar*)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F3	2	Atlantic salmon (*Salmo salar*)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F4	3	Atlantic salmon (*Salmo salar*)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F5	7	Atlantic salmon (*Salmo salar*)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)

Results

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

The following bacteria were isolated:

- *Yersinia ruckeri* (Kidney & Gill: F1, F3)
- *Moritella viscosa* (Kidney: F5)
- *Vibrio* sp. (Kidney and Lesion: F4)
- *Vibrio* sp. (Lesion: F4 and F5)

From the tests conducted, we do not have evidence of resistance to oxytetracycline, sulphamethoxazole/trimethoprim or florfenicol. However, from the tests conducted, we have evidence which may indicate some resistance to amoxycillin.

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

Infectious salmon anaemia virus (ISAV)

Fish Number	**Endogenous control Cp value**	**Cp Values**			**Reported Result (PCR)**
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	-	-	-	-	Negative
F4	-	-	-	-	Negative
F5	17.82	38.89	40.00	38.14	POSITIVE

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Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	14.72	19.24	19.46	19.24	POSITIVE
F4	14.84	20.07	20.10	20.17	POSITIVE
F5	-	-	-	-	Negative

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.92	28.86	28.84	28.81	POSITIVE
F2	19.39	24.76	24.77	24.76	POSITIVE
F3	19.78	29.14	29.10	28.96	POSITIVE
F4	20.01	25.44	25.60	25.61	POSITIVE
F5	19.30	27.49	27.46	27.44	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), salmonid alphavirus (SAV) and viral haemorrhagic septicemia 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	19.92	31.66	31.85	31.68	POSITIVE
F2	19.39	27.05	27.24	27.35	POSITIVE
F3	19.78	29.34	29.45	29.35	POSITIVE
F4	20.01	28.92	28.58	28.64	POSITIVE
F5	19.30	31.46	31.35	31.85	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.92	28.33	28.42	28.98	POSITIVE
F2	19.39	27.71	27.59	27.47	POSITIVE
F3	19.78	26.39	26.32	26.38	POSITIVE
F4	22.10	30.37	30.31	30.66	POSITIVE
F5	19.30	26.03	26.04	26.21	POSITIVE

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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:

Gill: Lamellar hyperplasia and fusion, mild, multifocal (F1-F4) with some vascular disturbances (F1) and small foci of cellular necrosis (F2), ranging from few to several amoeboid cells resembling *Neoparamoeba perurans* (F1, F2, F4). Some aneurysmal dilation/telangiectasia (F4). Some autolytic artefacts observed in F1.

Skin & Muscle: Absence of epidermal layer (F3) and dermal outer layer with Gram-negative bacteria associated.

Heart: Myocarditis, multifocal, mild (F1, F3) and minor foci of cell infiltration (F2, F3) and with Gram-negative bacteria (F3). Areas of light H&E stain observed in the compact layer of the ventricle chamber (F1).

Gut and pyloric caeca: Within the normal range.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, ranging from minor to mild, multifocal (F1) and vessels filled with circulating cell with Gram-negative bacteria (F1). F4 displayed some healing features. Congested vessels observed in F2. Some hepatocellular vacuolation (macrovesicles).

Kidney: Interstitial necrosis, mild, multifocal (F1, F3, F4, F5) with occasional rod-shaped Gram-negative bacteria (F1, F3, F4) also observed within the glomeruli (F1).

Spleen: Necrotising splenitis (F1, F3, F5) with rod-shaped Gram-negative bacteria (F1, F3, F4 F5). Some cuffing (F4).

Section 3: Issues Raised

During the inspection under the Aquatic Animal Health (Scotland) Regulations 2009, 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:

- Incorrect mortality data provided during inspection. Cross referenced with mortality reporting and satisfied that accurate data is being recorded and reported. No further action is required.

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

Signed: [redacted] Date: 23/01/2024

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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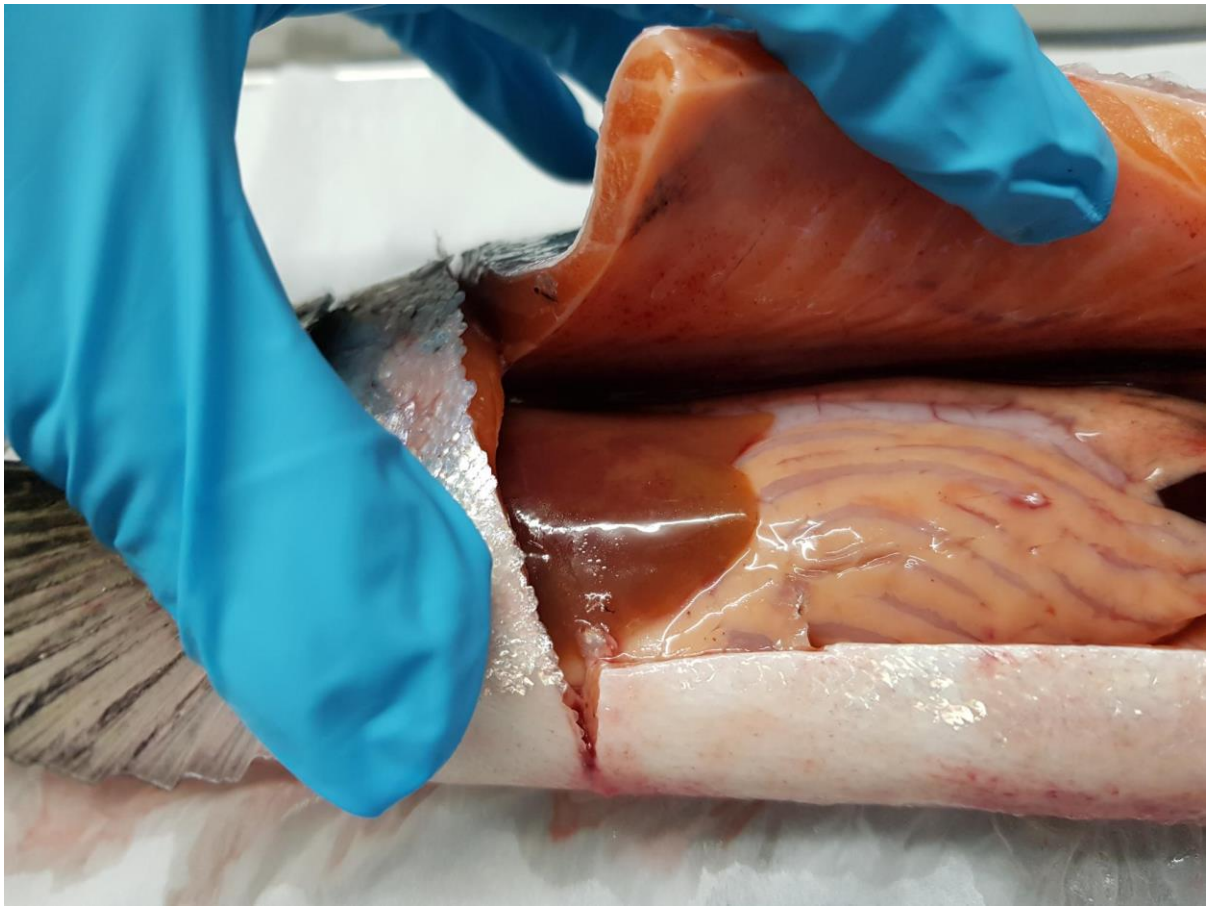
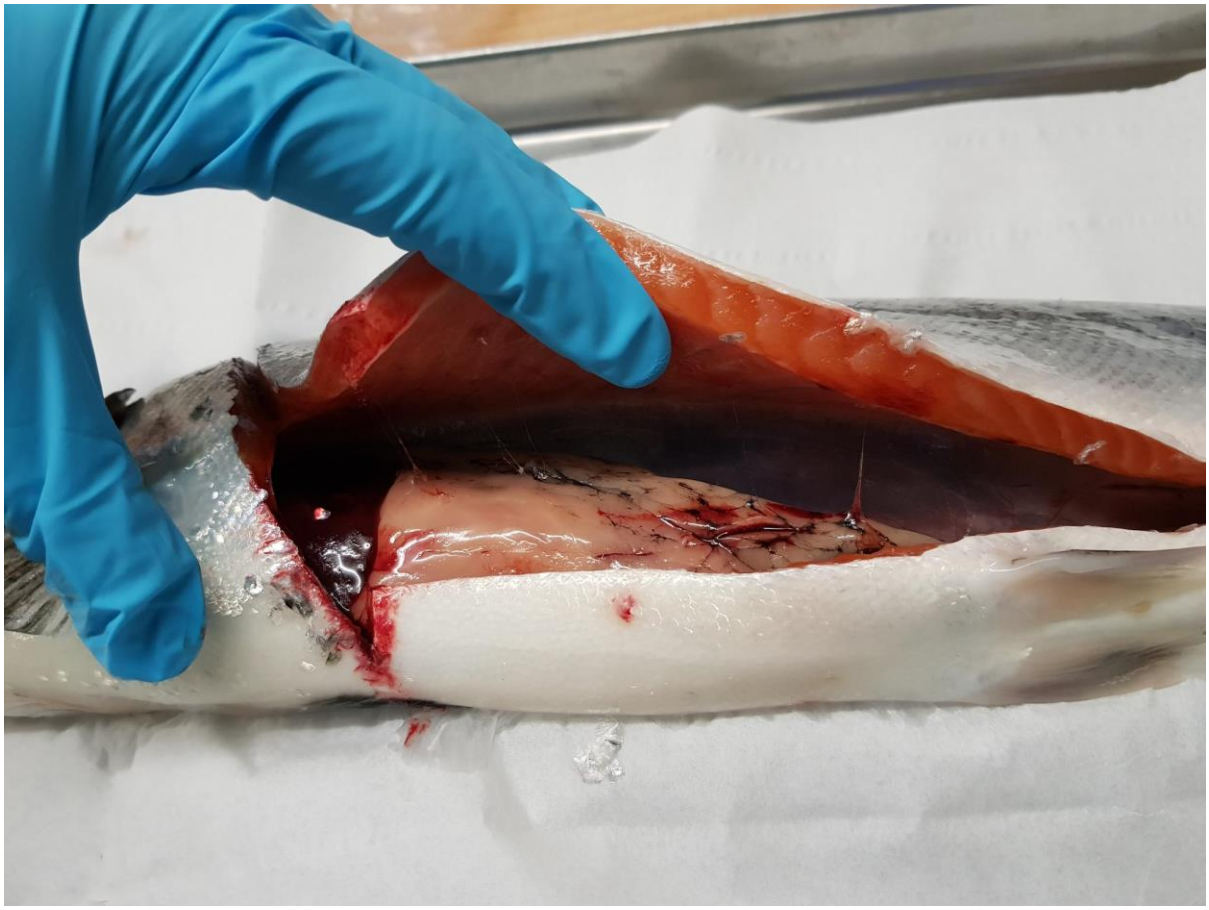
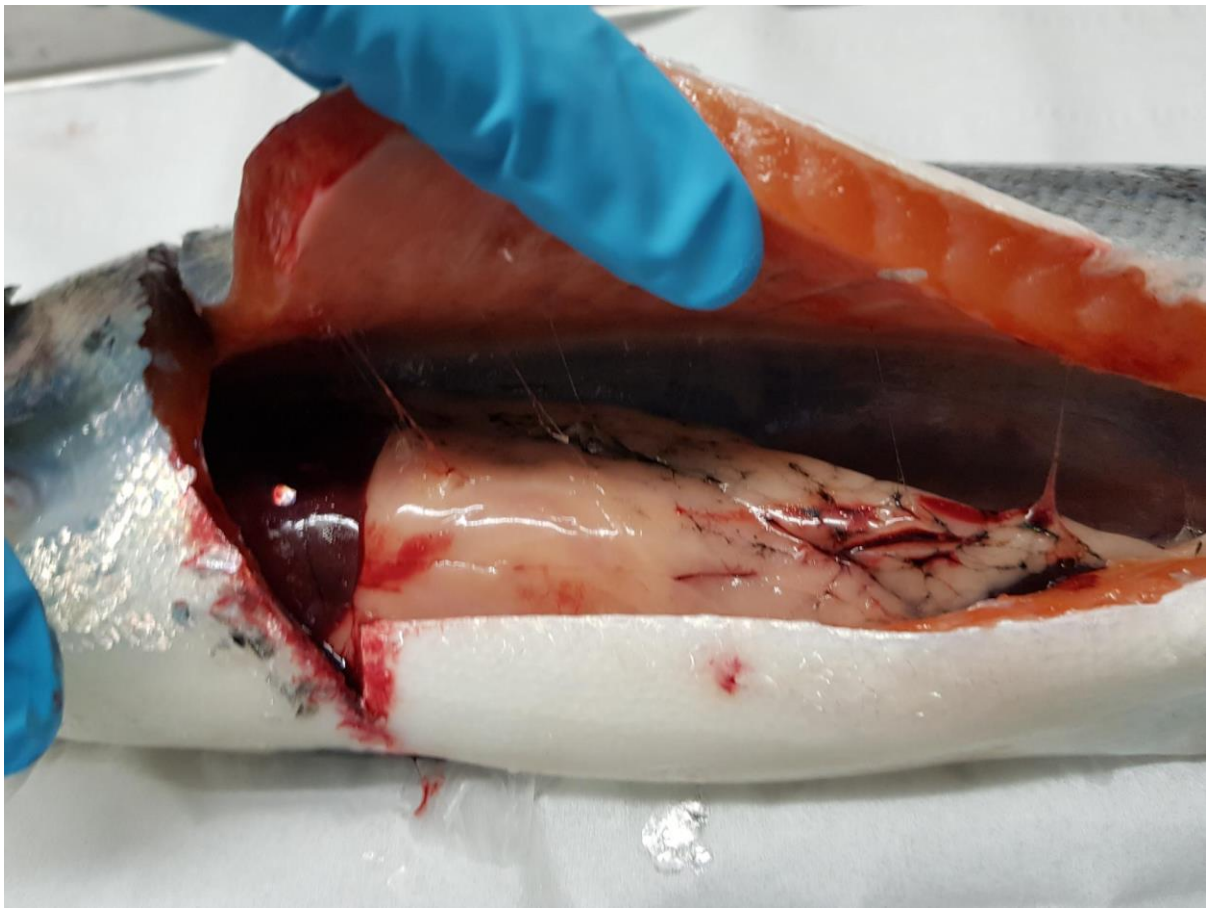
F1 –



F2 –





F3 –


F3

F4 –

F5 –


F5

Case No:	2023-0530	Date of visit:	21/11/2023
Time spent on site:	4 Hours	Main Inspector:	[redacted]
Site No:	FS1118	Site Name:	Trilleachan Mor
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 11.1 Thermometer No: T309 FHI 045 completed N/A

Observations: Region: WI Water type: S CoGP MA: W-6

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Site inspected in response to rapid increased mortality. Week 45 (54,755, 9.93%) and Week 46 (77,987, 15.7%) attributed to a combination of issues including AGD, PGD, treatment losses and bacterial infection.

Due to time constraints imposed by poor weather on the date of inspection, only 2 pens were inspected for clinical signs of disease. 5 fish were removed for diagnostic sampling from the two pens inspected, sampling was conducted in a rough sea state in wet and windy weather on the floor of the sites voe boat.

From inspection of the stock, approximately 50 fish in each pen were observed as moribund and lethargic. A healthy population of fish was observed shoaling in each pen.

The most recent results reported from the site company vet was on 21/11/2023 which showed positives for PRV, P.Skyensis, Piscirickettsia, Yersinia and Tenacibaculum.

Site planning to treat Aquatet (Oxtetracycline) antibiotics, 10 - 14 day treatment started Friday 24th.

Slice treatment 16/11/2023, Tricaine, 14/11/2023 Freshwater FLS, 3 hour treatments.

Cleanerfish mortality (Wrasse) - Wk 47 (217, 1.03%), Wk 46 (36, 0.17%), Wk 45 (70, 0.33%), Wk 44 (98, 0.46%).
Cleanerfish mortality (Lumpfish) - Wk47 (615, 0.73%), Wk46 (138, 0.16%), Wk45 (1,144, 1.33%), Wk 44 (525, 0.61%)

Case No:	2023-0530	Site No:	FS1118
Date of Visit:	21/11/2023	Inspector(s):	[redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities		5	Facilities stocked		4	No facilities inspected		2
Species	SAL	LUMP	Wrasse					
Age group	2023 Q1	2023	2023					
No Fish	316,750	84,064	20,827					
Mean Fish Wt	2.7kg	40g	80 - 100g					
Next Fallow Date (Site)		09/2024		Next Input Date (Site)		12/2025		
Recent (last 4 wks) disease problems?			Y	Any escapes (since last visit)?				N
If yes, detail:	See additional info							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	31/05/2022
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

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?	Y
2. How are mortalities disposed of?	Other (detail)
If other detail:	Whole fish - whiteshore cockles
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	Wk 47 (41,386, 11.56%), Week 46 (138,693, 27.92%), Week 45 (54,755, 9.93%), Week 44 (9,870, 1.76%)
5. Evidence of recent increased/atypical mortalities?	Y

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

All stocked facillities affected by increased mortality. Mortality onsite has been evelated since Wk42. See additional info.

6. Any other peaks in mortality during period checked?	N
If yes, detail:	
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	SLICE
If other, detail:	T.M.S
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)?	SLICE
If other, detail:	T.M.S
6. Are medicines stored appropriately?	Y

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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?	
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?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	See additional info
Records checked between:	31/05/2022 - 21/11/2023

Case no:	2023-0530	Site No:	FS1118	Date of visit/ Sampling:	21/11/2023	21/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	12:25:00	13:40:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Wet	2	Windy	3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5							
	Fish nos	1	2	3	4	5							
	Pool Group												
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	1.7kg	1.7kg	1.7kg	1.7kg	1.7kg							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Seaforth (FS1042)	Seaforth (FS1042)	Seaforth (FS1042)	Seaforth (FS1042)	Seaforth (FS1042)							
	Facility No	4	4	4	3	3							

11/2023 Additional Sample Information:

5 Total Tests assigned 3

Case no: 2023-0530 Site No: FS1118 Method of killing: Percussive

Date of visit: 21/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number		F1	F2	F3	F4	F5					
Time sampled after death (if > 45 minutes)					0	15					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale	M	M	M	M	M					
	Zoned										
	Necrotic										
Lesions	Flank										
	Elsewhere										
Vent	Inflamed	W		W							
	Trailing faeces										
Lice Load	Estimate numbers	3	5	1	8	4					
Internal Signs											
Ascites	Clear	S	S	S	S	S					
	Bloody	W	W	W	W	W					
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas	W	W	W	W	W					
	Deformed										
Liver	Petechial haem										
	Gross haem		W								
	Tissue breakdown										
	Enlarged										
	Colour number(s)	4	4	3	3	4					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem	W	W	W		M					
	Tubules mauve										
	Lack of fat		W			W					
Spleen	Enlarged										
	Granulomas										
Gut	No food present	S	S	S	S	S					
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging	M	M	M		M					
	Fluid filled	S	S	S	S	S					
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2023-0530

Date of visit: 21/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

Pericardium was fluid filled around the heart of each fish. Heart had what looked like white scar tissue present in each fish.

Site No: FS1118

Case No: 2023-0530

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0530 Date of visit: 21/11/2023

Site No: FS1118 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
VSPE	4/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
GPAT	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
EPIT	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
LPAT	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
HPAT	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
SPAT	4/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
KPAT	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
AGDQ	1/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
PNST	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
SPVP	5/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
SALP	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
ISAQ	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
VHSP	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
IPNM	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
IHNP	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]
PMVP	0/5	09/01/2024	[redacted]	12/12/2023	[redacted]	18/01/2024	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA, REP	18/01/2024	[redacted]	[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0119	**DATE OF VISIT**	21/11/2023
SITE NO	FS1118	**SITE NAME**	Trilleachan Mor
CASE NO	20230530	**INSPECTOR**	[redacted]

Section 1: Summary

The above site was inspected following reports of increased mortality by the farm operator. During the physical inspection of the site, five fish were removed for diagnostic sampling.

Histopathologic examination revealed chronic, multifocal splenitis, nephritis and myocarditis with moderate pericarditis potentially associated with bacterial infection. However, no associated bacterial isolation was made due to an absence of specific media. Mild, multifocal, hyperplasic branchitis was also observed.

Vibrio. was identified on plates taken from kidney material of 4/5 fish. The level and purity of growth would not suggest this bacterium would be implicated as the primary source of morbidity.

Five fish tested positive for *Paranucleospora theridion* and salmon gill poxvirus (SGPV) and one fish tested positive for *Neoparamoeba perurans* by qPCR.

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

The site was inspected following reports of increased mortality by the farm operator. At the time of visit the site was stocked with 316,750 Atlantic salmon at an average weight of 2.7kg.

Mortality at Trilleachan Mor peaked at its highest level in weeks 45 (54,755 9.93%) and 46 (77,987, 15.7%) with mortality being attributed to a combination of issues including AGD, proliferative gill disease (PGD), treatment losses and bacterial infection.

Upon the physical inspection of the stocks, the visible population of fish presented as moribund and slow moving. Fish is pens 3 and 4 displayed more severe in regards to clinical signs of disease, five fish were removed from these pens for diagnostic sampling.

All fish removed for sampling presented as moribund prior to sampling. Externally, the gills of all five fish were pale. Lice levels observed on fish removed for sampling ranged between 1 and 8 lice per fish of all stages. The ventrum of F1 and F3 was inflamed.

Internally, bloody ascites was present in all fish sampled. The pericardium in all fish sampled was fluid filled and heart of each fish had some tissue discolouration. Petechial haemorrhaging was observed to the pyloric caeca in F1, F2, F3 and F5 and a lack of fat was observed in F2 and F5 to the organ. The swim bladder was fluid filled in all fish sampled and petechial haemorrhaging was

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observed in F1, F2, F3 and F5. Some haemorrhaging was present to the liver of F2 and F5 and the liver of F3 was pale.

Samples

Samples were collected from 5 fish according to the table below:

Fish number	Facility number	Species	Stage	Origin
F1 – F3	4	Atlantic salmon	2023 Q1 1.7kg	Seaforth (FS1042)
F4 – F5	3	Atlantic salmon	2023 Q1 1.7kg	Seaforth (FS1042)

Results

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

The following bacteria were isolated:

- *Vibrio sp.*: F1, F2, F3 and F4 (Kidney).

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	20.85	22.22	22.35	22.40	POSITIVE
F2	19.52	21.41	21.50	21.54	POSITIVE
F3	20.08	20.32	20.26	20.31	POSITIVE
F4	19.28	22.30	22.27	22.31	POSITIVE
F5	19.34	22.54	22.58	22.59	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV).

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	20.85	34.72	34.81	35.30	POSITIVE
F2	-	-	-	-	negative
F3	-	-	-	-	negative

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F4	-	-	-	-	negative
F5	-	-	-	-	negative

Paranucliospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	20.85	25.44	25.43	25.53	POSITIVE
F2	19.52	27.40	27.58	27.50	POSITIVE
F3	20.08	28.11	27.96	28.17	POSITIVE
F4	19.28	30.77	30.88	30.85	POSITIVE
F5	19.34	28.55	28.87	28.86	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1 – F5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplasia and fusion, mild, multifocal (F1-F5), F2 also displayed minor foci of cellular necrosis and F3 some vascular disturbance. Some basophilic epithelial inclusions (likely epitheliocystis) observed in F4. F5 also displayed a small focal area with rod-shaped bacterial aggregates and some lamellar adhesions, mild, multifocal. Some aneurysmal dilation/telangiectasia (F1-F5).

Skin & Muscle: Within the normal range.

Heart: Myocarditis multifocal, ranging from very minor to minor (F3, F5) and few thrombi (F3). Necrotising epicarditis, moderate, diffuse (F1-F5) with few rod-shaped Gram-negative bacteria (F1, F2, F5), few intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.) (F2, F3, F4) and foci of granulomatous inflammation displaying centrally splendore-hoeppli reaction (homogeneous eosinophilic material) and an area of mineralisation (F3), and F2 displayed occasional round blue structures resembling bacteria (likely *Piscirickettsia* sp.). Areas of light H&E stain observed in the compact layer of the ventricle chamber (F1). Several thrombi nests observed in the ventricle of F3 and F4 and foci of granulomatous inflammation displaying centrally splendore-hoeppli reaction (homogeneous eosinophilic material) (F4, F5) and multinucleated giant cells (F5).

Gut and pyloric caeca: Peritonitis, mild, multifocal (F1, F4). F5: Almost no gut.

Pancreas: Within the normal range.

Liver: Capsulitis (F1-F4), some cuffing (F1). Hepatocellular necrosis, mild, multifocal (F2, F3, F4, F5).

Kidney: Interstitial necrosis, minor, multifocal (F1, F2, F5) with occasional rod-shaped Gram-negative bacteria F1 and F3, F4 with foci of granulomatous inflammation displaying centrally splendore-hoeppli reaction (homogeneous eosinophilic material).

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Spleen: F3, F5 displayed foci of granulomatous inflammation displaying centrally splendore-hoeppli reaction (homogeneous eosinophilic material) and F4 to a lesser extent. Some cuffing (F1) and necrosis, mild, multifocal (F1). F2: spleen not present.

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

Signed: [redacted] Date: 12/01/2024

Fish Health Inspector

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FS1118/FB0119 Trilleachan Mor – 2023-0530

0086

F2


SHEFFIELD S6 2BJ ENGLAND
DISPOSABLE SCALPEL
STERILE R
STERILIZED BY GAMMA RADIATION
sterile only if packaging is not
opened, damaged or broken
SINGLE USE
22

F3


F3
Cage4
12:57
Swann-Morton
DISPOSABLE SCALPEL
STERILE
REF 0508
LOT 709184
2024-04
22

F4


F5
cage3
13:21
STERILE

Case No: 2023-0534 Date of visit: 28/11/2023

Time spent on site: 3hrs Main Inspector: [redacted]

Site No: FS0694 Site Name: Fishnish (B)
Business No: FB0125 Business Name: Scottish Sea Farms Ltd

Case Types: 1 ECI 2 CNI 3 SLI 4 VMD 5 6

Water Temp (°C): 11.43 Thermometer No: T309 FHI 045 completed

Observations: Region: ST Water type: S CoGP MA M-35

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	N	If yes, see additional information/clinical score sheet.
Gross pathology observed?	N	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	N	

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

Additional Case Information:

Fish came on from Barcaldine (a mix of Aquagen Elite and Aquagen). Both stocks are reportedly performing well. A small number of moribunds were observed across the site but no other clinical signs of disease were observed so not removed for diagnostic sampling.

One cage of farmed lumpfish were transferred onto site from Fishnish (A), but staff struggled to remove them and were all lost during a 12hr FW treatment. APHA have been informed. Wild caught wrasse from around Orkney, Oban and Skye were stocked onto the site over several inputs in June, July, August and September and have been performing well. ~300 mortalities have occurred since input.

Slice treatment was completed in December 2022, January, February and March 2023. A FW treatment was done in May, the thermolicer was on site in June and July and a course of Aquatet was completed in September. Fish were vaccinated against IPN and Furunculosis while in the FW hatchery.

Biomass on site is higher than preferred. Due to the water temperature dropping significantly in the weeks following the Aquatet treatment, the withdrawal period for the Oxytretracyline may exceed 55 days. The fish have been sampled for residues and the site is awaiting results. If the fish have withdrawn from the treatment then the site will be passive graded and 9 harvests will occur between now and the new year to reduce biomass on site.

Average adult female leps combined above reporting threshold:
WK18 23: 0.63, WK20 23: 1.39, WK25: 2.56, WK28: 0.55, WK29: 1.56, WK31: 1.25, WK32: 1.14, WK33: 1.2, WK34:1.1, WK35: 1.61, WK37:0.76, WK38: 1.78, WK39: 1.6, WK40: 1.2, 43: 1.9, WK44: 0.89.

AGD diagnosed on site and levels are remaining at moderate level.

Fish were removed from feed for a prolonged period during the summer months under veterinary instruction due to increased levels of jellyfish experienced on site

VHP, FMS and BMP all state mortalities are getting incinerated on the site barge, however, mortalities from this site and Fishnish A are both being transferred in mort tubs back to a common skip at the shorebase before being uplifted by Billy Bowie and taken to Barkip for ensiling.

Tricaine was recorded in treatment record when Optomease was used.

Site staff informed inspector during visit that a seal had entered one of the cages on site recently. This had not been reported to the FHI as required and a retrospective notification was requested. With this said, the site was inspected as satifactory in terms of containment at the time of inspection.

Inspection and paperwork completed by [redacted], observed by [redacted].

Case No: 2023-0534 Site No: FS0694

Date of Visit: 28/11/2023 Inspector(s): [redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities		7	Facilities stocked		6	No facilities inspected		7
Species	SAL	WRA						
Age group	22 Q4	Wildcaught						
No Fish	341,426	9,302						
Mean Fish Wt	3.9kg	60g						
Next Fallow Date (Site)		June 24	Next Input Date (Site)			Apr 25		
Recent (last 4 wks) disease problems?			Y	Any escapes (since last visit)?				N
If yes, detail:	AGD and Furunculosis							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	10/11/2021
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

Transport Records

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

Mortality Records

1. Mortality records available for inspection?	Y
2. How are mortalities disposed of?	Biogas - Barkip
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	Wk46: 1,898 (0.55%), Wk45: 1,554 (0.45%), Wk44: 1,438 (0.41%), Wk43: 1,251 (0.36%)
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:	Wk32 2022: 1,084 (1.13%), wk33: 1,570 (1.66%), wk36: 576 (1.35%), wk37: 783 (1.86%), Wk38: 728 (1.76%), Wk39: 710 (1.75%), wk40: 701 (1.76%), wk42: 253 (1.16%) - fish held on site until Oct (meant to be harvested in July), fish diagosed with CMS and were 6kg.
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	T.M.S., Oxytetracycline
If other, detail:	Optomease used not Tricaine
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)?	T.M.S., Oxytetracycline
If other, detail:	Optomease not tricaine
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	Y
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 been included and *how* and *when* that will be notified to Scottish Ministers?	Y
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	Y
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	Y
8. Have the biosecurity procedures been adequately implemented on site?	N
If no, detail:	Mortality storage and disposal procedure had been amended but not updated in BMP.

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	
Records checked between:	10/11/21 - 23/11/23

Case Number:	2023-0534		Site No:	FS0694	Insp:	
Date of Visit	28/11/2023					

		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	0
	Number of suppliers	0	5	10	14	5
Movements off	Frequency of movements off	0	3	6	10	0
	Number of destinations	0	3	6	10	0
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		2
	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		1
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				
	Common processes with other farms	3				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		1
	Sites sharing staff and equipment	0	1	2		1
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		**18**
				Rank		**MEDIUM**

Case No: 2023-0534 Site No: FS0694

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	N
2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?	Y
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?	Y
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?	Y
5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)	Y
6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)	Y
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)	N
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?	Y
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.	Y
9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)	N
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)	Y
11. Has any other action been taken (where applicable)?	Y
12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?	Y
13. Are treatments, where conducted, carried out in cooperation between participating farms?	Y
14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?	Y
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?	Y
16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.	Y

Containment Inspection

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

Sealpro nets, top

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?	N
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)	Y

Case No: 2023-0534 Site No: FS0694

Date of Visit: 28/11/2023 Inspector: [redacted]

Point of Compliance

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

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?	Y
3. Is the current FMAg/S available for inspection?	Y
4. Does the FMAg/S identify the relevant farm management area?	Y
5. Does the FMAg/S identify the fish farm site(s) to which it applies?	Y
6. Does the FMAg/S identify the date of commencement of the agreement or statement?	Y
7. Does the FMAg/S identify the date of review?	Y

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?	Y
9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?	Y
10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?	Y
11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?	Y
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?	Y

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?	Y
14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?	Y
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?	Y
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?	Y
17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?	Y

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?	Y
19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?	Y

Harvesting

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

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?	Y
22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?	Y
23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?	Y

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?	N/A

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?	N
26. What is the version no/date of issue of the FMAg/S?	2022

Case no:	2023-0534	Site No:	FS0694	Date of visit/ Sampling:	28/11/2023	28/							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	14:00:00	14:45:00	Inspector:		VMD No.	14							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST		BA		MG		VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No												
	Fish nos	1	2										
	Pool Group												
Stock Details	Species	SAL	SAL										
	Average weight	3.9kg	3.9kg										
	Sex	N/A	N/A										
	Water Type	SW	SW										
	Stock Origin	Barcaldine Smolt Unit	Barcaldine Smolt Unit										
	Facility No	1	5										

11/2023	Additional Sample Information:
	Fish humanely dispatched by percussive blow.

0 Total Tests assigned 0

Site No: FS0694

Case No: 2023-0534

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0534 Date of visit: 28/11/2023

Site No: FS0694 Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI, CNI, SLI, VMD	12/12/2023		
Case completion	30/01/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0125	**DATE OF VISIT**	28/11/2023
SITE NO	FS0694	**SITE NAME**	Fishnish (B)
CASE NO	20230534	**INSPECTOR**	[redacted]

Case completion report

Issues were raised in relation to the above case, with a requirement for records to be submitted by 26th January 2024. The required records have now been provided to the Fish Health Inspectorate.

This case will now be closed. This site may be subject to further audit and recommendations in the future.

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

Signed: [redacted] Date: 30/01/2024

Fish Health Inspector

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FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0125	**DATE OF VISIT**	28/11/2023
SITE NO	FS0694	**SITE NAME**	Fishnish (B)
CASE NO	20230534	**INSPECTOR**	[redacted]

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009.

All epidemiological units were inspected. On this occasion no samples were taken for disease analysis. The Inspector did not observe any clinical signs associated with the listed diseases as described in the Aquatic Animal Health (Scotland) Regulations 2009.

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 appeared to be inadequately maintained.
The following points were raised with the site representative during the inspection:

- Movements of lumpfish were not recorded. Records must be updated to include all movements on and off the site.

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 Directorate were available for inspection.

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Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

The biosecurity measures plan for the site was inspected and found to be inadequately maintained. The following points were raised with the site representative during the inspection:

- Mortality storage and disposal inaccurate. BMP should be updated to reflect current practice.

These must be addressed to ensure the conditions of authorisation for your Aquaculture Production Business (APB) are being met. Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below) within 30 days of the date this report was issued.

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 inadequately maintained.

The following points were raised with the site representative during the inspection:

- Tricaine use was recorded in medicine record when Optomease was used. Records should be updated to reflect correct treatment.

Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below) within 30 days of the date this report was issued.

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, containment and escapes.

However, recommendations were issued in relation to the farm management statement and the non-reporting of circumstances which give rise to a significant risk of an escape:

- The farm management statement was inspected and it was found that the site was not managed and operated in accordance with the farm management statement. It was noted that mortality storage and disposal procedures described in the farm management statement did not reflect the current practice on site. Either the site must be operated in accordance with the farm management statement or the farm management statement must be updated to reflect the current practices on site to ensure compliance with the legislation.

- Staff informed inspector during visit that a seal had entered a cage recently but the circumstance which gave rise to a significant risk of escape was not reported to Scottish Ministers as required by the current policy. Initial and final escapes notifications must be submitted retrospectively.

UKAS Accredited Testing Body – Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Please ensure that these points have been addressed within 30 days of the date this report was issued. Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below).

The site may be subject to further inspection or enforcement action should the appropriate action regarding the above points not be taken within the time period stipulated.

Please contact myself or the duty inspector should you require any assistance or clarification in implementing any requirement or recommendation detailed in this report.

Signed: Date: 12/12/2023

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

UKAS Accredited Testing Body – Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Case No: 2023-0540 Date of visit: 28/11/2023

Time spent on site: 2hrs Main Inspector: [redacted]

Site No: FS0465 Site Name: Shuna Castle
Business No: FB0134 Business Name: Kames Fish Farming Ltd

Case Types: 1 ECI 2 CNI 3 SLI 4 DIA 5 6

Water Temp (°C): 11.38 Thermometer No: T308 FHI 045 completed

Observations: Region: ST Water type: S CoGP MA: M-40

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Stock on site from Westmill Hatchery (Troutlodge; pen 2 & 3) and Torhouse Mill (KFF own stock)

Mortality attributed to jellyfish insult experienced in summer 2023 and only slowly recovering. Secondary infection of tenacibaculum, PRV and Piscirickesttsia salmonis, with the latter being described as sub-clinical. Recent thermolicing treatment conducted over weekend of 24/11 and 25/11 has exacerbated mortalities (in all pens). Lice numbers in loch have started to creep up in recent weeks, therefore interventioned was conducted.

Targeted harvests were occuring on site during site inspection; plan is to have 4 pens remaining by end December 2023. Site is planning to fallow out in July 2024.

Site is planning to change its nets after the next crop to CFR nets- same as the ones recently installed at Eilean Coltair.

During site inspection, a number of moribund fish were seen in pen 3 and pen 2. These pens are stocked with Westmill Hatchery fish (origin:Troutlodge). Pens 10 and 8 were also observed with an increased number of moribunds. A small number of fish on site were observed with large circular lesions but were not able to be caught for sampling. Healing lice damage and lesions on the head were also seen in some of the fish; some of these fish were removed for diagnostic sampling. Diagnostic samples were taken from pen 3 and pen 5 (three from the former and two from the latter pen).

Case No: 2023-0540 Site No: FS0465

Date of Visit: 28/11/2023 Inspector(s): [redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities	10	Facilities stocked		9	No facilities inspected		
Species	RTR						
Age group	2022						
No Fish	156,101						
Mean Fish Wt	2.87kg						

Next Fallow Date (Site)	July 2024	Next Input Date (Site)	End October/ early Nov 2024
Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	

If yes, detail: Tenacibaculum spp. T.maritimum, PRV3, SRS

Movement Records

1. Movement records available for inspection?	
2. Date of last inspection:	03/10/2023
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? Other (detail)

If other detail: Ensiled at Kames Pier and then taken away via fergusons.

3. Mortality records complete and correctly entered?
4. Recent mortality (last 4 wks): 2023: Wk 47, 1.80%, 2931; Wk 46, 1.60%, 2645; Wk45, 0.85%, 1413; W 2956
5. Evidence of recent increased/atypical mortalities?

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

pen 2 and 3 most affected: WK 46 pen 2, 8.92%, 770; pen 3, 9.77%, 901 (attributed due to lesions from Tenacibacu pen 2,9.47%, 744; pen 3, 3.85%, 594 (attributed due to lesions from Tenacibaculum).

6. Any other peaks in mortality during period checked?

If yes, detail:

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

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.

Treatments and Medicines Records

1. Recent treatments (see comment)?

If yes, detail: T.M.S

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)? T.M.S

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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?

6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?

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).

reporting from health manager 20/11/2023:
Tenacibaculum maritimum (7/9), Piscirickett
only in the troulodge stock (pen 3)) with the
identified as the main cause. SRS at sub-cl
and dermic feed is being fed.

Records checked between: 03/10/2023-28/11/2023

10

N

Y

Y
Y
Y
N/A

Y
Y

Y

Y

Vk44, 1.74%,

Y

lum). Wk47

N

N/A

Y

Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
ttsia (1/9 and
former
inical levels

Case no:	2023-0540	Site No:	FS0465	Date of visit/ Sampling:	28/11/2023	28/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	10:40:00	12:20:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Sunny	2	Dry	3		4		5				
Summary samples	HIST	#REF!	BA	#REF!	MG	#REF!	VI	#REF!	PA	#REF!	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5							
	Fish nos	1	2	3	4	5							
	Pool Group	P1	P2	P3	P4	P5							
Stock Details	Species	RTR	RTR	RTR	RTR	RTR							
	Average weight	2.7kg	2.7kg	2.7kg	2.7kg	2.7kg							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Torhouse Mill (FS0560)	Torhouse Mill (FS0560)	Westmill Fish Farm (FS0606)	Westmill Fish Farm (FS0606)	Westmill Fish Farm (FS0606)							
	Facility No	5	5	3	3	3							

11/2023 Additional Sample Information:

5 Total Tests assigned 6

Case no: 2023-0540 Site No: FS0465 Method of killing: Percussive

Date of visit: 28/11/2023 Inspector(s): [redacted] 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)		50mins	75mins	80mins	105min	120min					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	M	M	M	M	M					
	Hanging vertical										
	Spiralling										
	Flashing		W								
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened		W								
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract	M									
	Haemorrhagic										
Gills	Pale										
	Zoned	S	W		M						
	Necrotic										
Lesions	Flank										
	Elsewhere			S	S	S					
Vent	Inflamed	M	W	M	M	M					
	Trailing faeces										
Lice Load	Estimate numbers	16	10	15	10	10					
Internal Signs											
Ascites	Clear										
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	2	5	3	3	3					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged	M	M	M	M	M					
	Granulomas										
Gut	No food present	S	S	S	S	S					
	Yellow pseudo-faeces	M	M	M	M	S					
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied			W							
General	Parasites present										
	Anaemia										

Case no: 2023-0540

Date of visit: 28/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

Case Number:	2023-0540		Site No:	FS0465	Insp:	
Date of Visit	28/11/2023					

		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	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	
	Number of suppliers	0	5	10	14	0
Movements off	Frequency of movements off	0	3	6	10	6
	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		4
	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				
	Common processes with other farms	3				3
	Collection point for waste from other farms	5				0
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		2
	Sites sharing staff and equipment	0	1	2		0
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		**18**
				Rank		**MEDIUM**

Case No: 2023-0540 Site No:

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 well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management A
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 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 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 suggest 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 scer 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)

bird 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? 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)

FS0465

	N
	N
s and emamectin benzoate) as time?	Y
Area (or equivalent)?	Y
	Y
	Y
are inspected? (CoGP Annex	N
above (from w/b 10/6/19)	Y
	Y
	Y
ed criteria for treatment or	Y
	N/A
	Y
	Y
?	Y
narios during the escalation of	Y
	Y
	N
	Y
	N
(Legal, CoGP – 4.4.38,	
	Y

Case No: 2023-0540 Site No: FS0465

Date of Visit: 28/11/2023 Inspector: [redacted]

Point of Compliance

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

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?	Y
3. Is the current FMAg/S available for inspection?	Y
4. Does the FMAg/S identify the relevant farm management area?	Y
5. Does the FMAg/S identify the fish farm site(s) to which it applies?	Y
6. Does the FMAg/S identify the date of commencement of the agreement or statement?	Y
7. Does the FMAg/S identify the date of review?	Y

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?	Y
9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?	Y
10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?	Y
11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?	Y
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?	Y

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?	Y
14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?	Y
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?	Y
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?	Y
17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?	Y

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?	Y
19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?	Y

Harvesting

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

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?	Y
22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?	Y
23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?	Y

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?	Y

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?	Y
26. What is the version no/date of issue of the FMAg/S?	April 2023 V12

Case No: 2023-0540 Date of visit: 28/11/2023

Site No: FS0465 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
AGDQ	3/5	15/12/2023		15/12/2023		23/01/2024		
PNST	4/5	15/12/2023		15/12/2023		23/01/2024		
VSPE	3/5	15/12/2023		15/12/2023		23/01/2024		
VSPE	5/5	15/12/2023		15/12/2023		23/01/2024		
PMVP	0/5	15/12/2023		15/12/2023		23/01/2024		
PRVP	0/5	15/12/2023		15/12/2023		23/01/2024		
SPVP	0/5	15/12/2023		15/12/2023		23/01/2024		
SALP	0/5	15/12/2023		15/12/2023		23/01/2024		
VHSP	0/5	15/12/2023		15/12/2023		23/01/2024		
IHNP	0/5	15/12/2023		15/12/2023		23/01/2024		
ISAQ	0/5	15/12/2023		15/12/2023		23/01/2024		
PISP	0/5	15/12/2023		15/12/2023		23/01/2024		
GPAT	5/5	22/01/2024		22/01/2024		23/01/2024		
AMGD	1/5	22/01/2024		22/01/2024		23/01/2024		
LPAT	5/5	22/01/2024		22/01/2024		23/01/2024		
KPAT	4/5	22/01/2024		22/01/2024		23/01/2024		

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI, CNI, SLI	18/12/2023		
DIAG	23/01/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0134	**DATE OF VISIT**	28/11/2023
SITE NO	FS0465	**SITE NAME**	Shuna Castle
CASE NO	20230540	**INSPECTOR**	[redacted]

Section 1: Summary

During a routine site inspection, a number of moribund rainbow trout with clinical signs of disease were observed in five pens. Five fish were removed for further examination and subsequent diagnostic sampling.

Histopathological examination revealed features consistent with mild, multifocal, hyperplasic bronchitis. Amoebic gill disease (AGD) was observed and *Neoparamoeba perurans* was confirmed by qPCR. *Paranucleospora theridion* was also detected by qPCR. Hepatocellular necrosis was observed in one fish.

Vibrio sp. was identified. The level and purity would suggest that although this bacterium was observed in significant numbers it is most likely to be present as a secondary pathogen in this case.

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

During a routine site inspection a number of moribund rainbow trout with clinical signs of disease, were observed in pens 2, 3, 5, 8 and 10. Five were removed for further examination and subsequent diagnostic sampling from pens 3 and 5.

At the time of the inspection the site was stocked with 156,101 2022 rainbow trout at an average weight of 2.87kg.

All five fish sampled were moribund and lethargic. Externally, all fish had inflamed vents; F3-F5 had ulcerative head lesions consistent with sea lice damage; gills on F1, F2, and F4 displayed zoning. Cataracts were observed in F1. F2 was also seen to be flashing in the pen. The lice load on all fish was moderate, with estimate numbers between 10 to 16 lice per fish.

Internally, all fish were observed with enlarged spleens and yellow pseudo-faeces. No food was present in the guts. The kidney in F3 appeared liquefied.

Samples

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

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Fish number	Facility number	Species	Stage	Origin
F1-F2	5	Rainbow trout	2022, 2.7kg	Torhouse Mill (FS0560)
F3-F5	3	Rainbow trout	2022, 2.7kg	Westmill Fish Farm (FS0606)

Results

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

The following bacteria were isolated:

- *Vibrio* sp. (kidney F2-F4; lesion F3-F5 and; gill F1-F5)

Kidney samples were tested for segments of nucleic acid indicative of the presence of *Piscirickettsia salmonis* using real-time PCR (qPCR). The samples tested negative.

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

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), piscine reovirus (PRV), piscine myocarditis virus (PMCV), salmonid alphavirus (SAV), salmon gill poxvirus (SGPV) and viral haemorrhagic septicemia 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	19.04	30.16	30.06	30.01	POSITIVE
F3	19.97	35.00	34.61	33.93	POSITIVE
F4	20.45	29.76	29.53	29.60	POSITIVE
F5		-	-	-	Negative

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.10	37.27	37.35	36.43	POSITIVE
F2	19.04	35.17	37.37	35.72	POSITIVE
F3	19.97	34.39	34.41	34.44	POSITIVE
F4	20.45	36.56	37.90	35.45	POSITIVE
F5		-	-	-	Negative

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Website - https://www.gov.scot/policies/fish-health-inspectorate/

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen, and kidney were taken from F1-F5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplasic branchitis, ranging from very mild to mild, multifocal (F1-F5) and lamellar adhesions (F1, F2), vascular disturbances (F1, F4 & F5) with areas haemorrhage (F1). Presence of few amoeboid cells resembling *Neoparamoeba perurans* observed in F2. Cell debris with bacteria between gill filaments observed in F1, some lamellar tip clubbing observed in F2. Some aneurysmal dilation/telangiectasia (F1).

Skin & Muscle: Within normal range.

Heart: Small areas of light H&E stain observed in the compact layer of ventricle chamber, very mild (F4) and one thrombus (F4). F5 displayed some minor necrosis at the atrium chamber.

Gut and pyloric caeca: Mild peritonitis (F2). F4 displayed hindgut with some fold congestion. F3: Almost not pyloric caeca.

Pancreas: Within the normal range. F3: Pancreas tissue almost non-existent.

Liver: Hepatocellular spotty necrosis, mild, multifocal (F1), hepatocellular vacuolation (macrovesicles), mild, diffuse (F1) and F3 to a lesser extent. F4 exhibited spotty infiltration, focal. F2 displayed some congested vessels. F5: Liver tissue not in section.

Kidney: Several renal tubules displaying mineralisation (F1) and few renal tubules exhibiting epithelial vacuolation. F3-F5 displayed some interstitial congestion and neutrophil-like influx. Hyaline droplets observed in the lining epithelium of the renal tubules of F4.

Spleen: Within normal range.

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

Signed: [redacted] Date: 23/01/2024

pp [redacted]
Senior Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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Website - https://www.gov.scot/policies/fish-health-inspectorate/

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0134	**DATE OF VISIT**	28/11/2023
SITE NO	FS0465	**SITE NAME**	Shuna Castle
CASE NO	20230540	**INSPECTOR**	[redacted]

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009.

All epidemiological units were inspected. On this occasion no samples were taken for disease analysis. The Inspector did not observe any clinical signs associated with the listed diseases as described in the Aquatic Animal Health (Scotland) Regulations 2009.

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 appeared to be adequately maintained.

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 Directorate were available for inspection.

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

UKAS Accredited Testing Body – Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

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.

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: 18/12/2023

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Diagnostic case: 2023 – 0540

Figure 1 Overview of fish 1

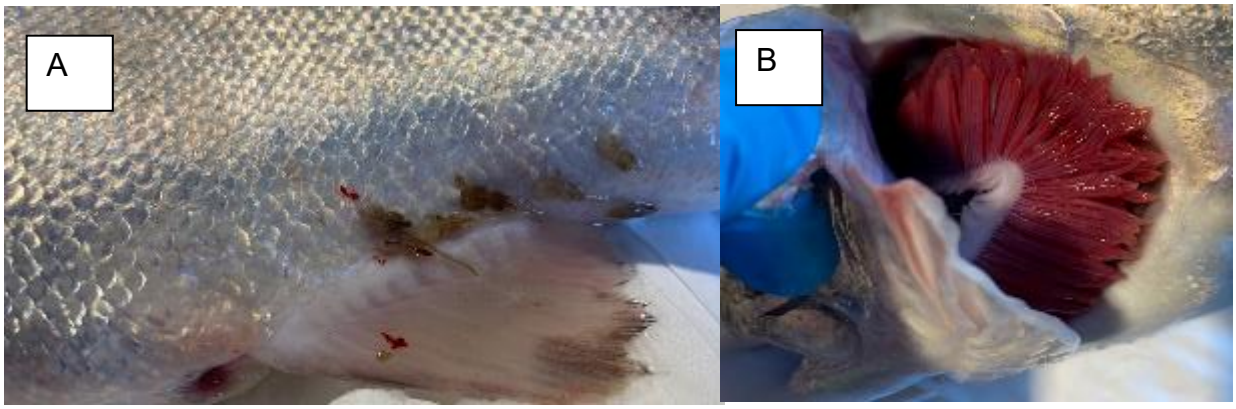

Figure 2 A) Picture of vent and lice on fish 1. B) Picture of gill from fish 1

Figure 3 Internal view of fish 1

Figure 4 External view of fish 2

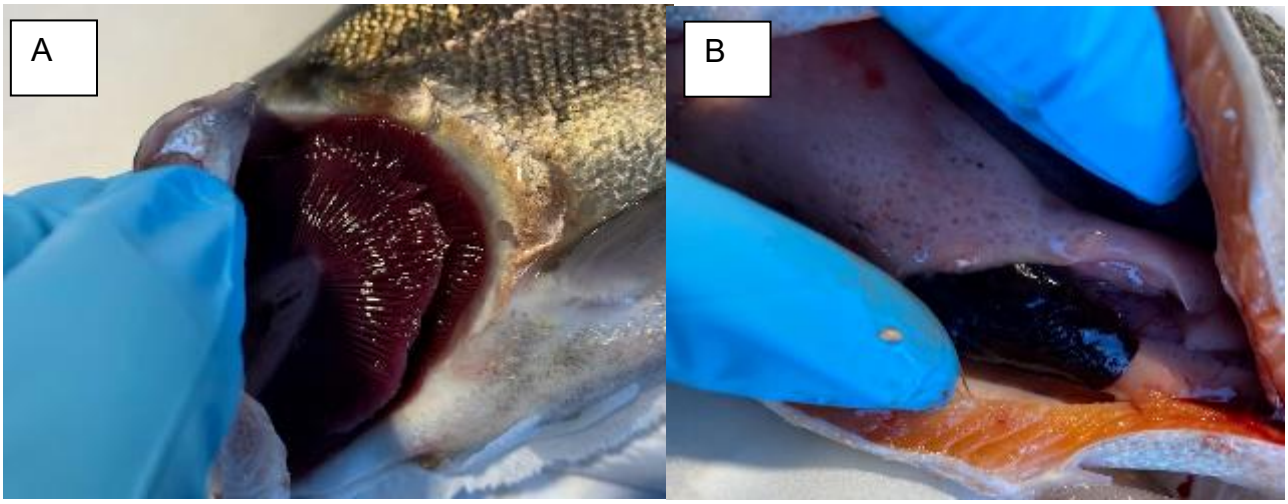

Figure 5 A) Gill from fish 2. B) Picture of spleen

Figure 6 internal view of fish 2

Figure 7 external view of fish 3

Figure 8 Gill of fish 3

Figure 9 internal view of fish 3

Figure 10 external view of fish 4

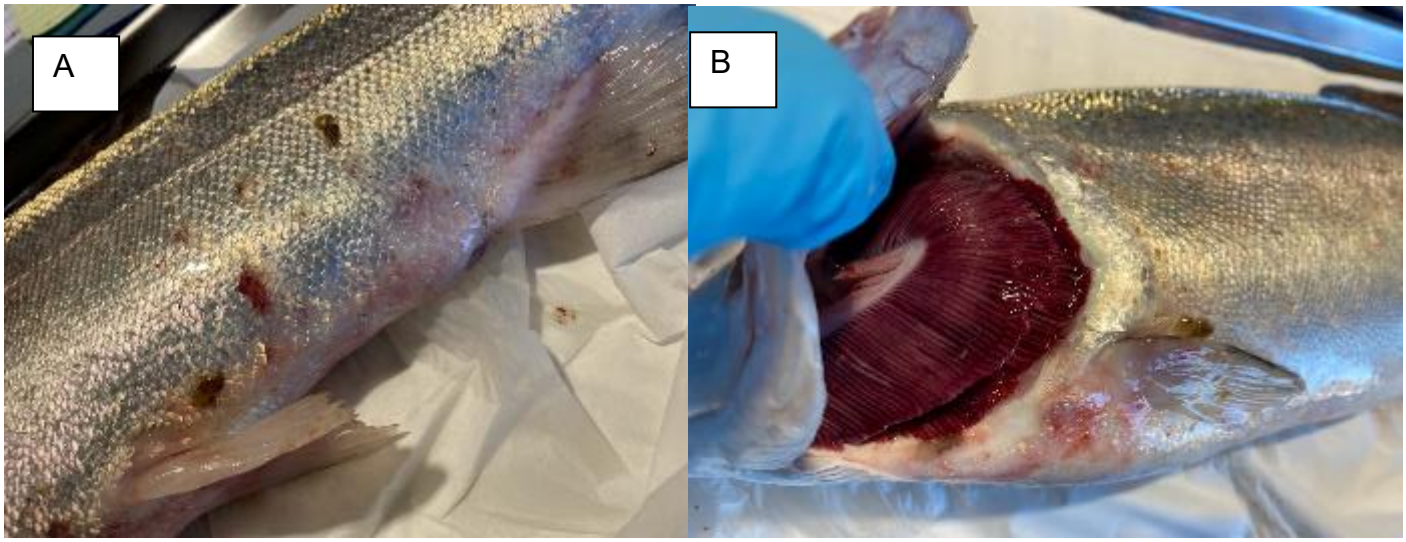

Figure 11 A) view of lesions of fish 4. B) gill of fish 4

Figure 12 internal view of fish 4

Figure 13 external view of fish 5

Figure 14 Gill of fish 5

Figure 15 internal view of fish 5

Case No: 2023-0543 Date of visit: 28/11/2023

Time spent on site: 2hrs Main Inspector: [redacted]

Site No: FS0427 Site Name: Fishnish (A)
Business No: FB0125 Business Name: Scottish Sea Farms Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 11.43 Thermometer No: T309 FHI 045 completed

Observations: Region: ST Water type: S CoGP MA M-35

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

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

Additional Case Information:

Fish came on from Barcaldine Smolt Unit, mix of Stofinfisker and Aquagen (cage 2 and 4) and aquagen only (cage 3). Site manager reported a significant variation in size between stocks, with the stofinfiskers not performing as well as they Aquagens.

Furunculosis, AGD and PGD have been detected on site. Fish were reported to have had lesions resulting from the infection however a course of Aquatet was completed in September and the fish have been reported to be feeding well again and gaining weight. Lesions had reportedly healed well following course of treatment.

Farmed lumpfish were imported from Ireland in December 2022 but staff struggled to remove them before a 12hr FW treatment so all were lost as a result, with none remaining on site. APHA have been made aware of this.
Wildcaught wrasse were stocked onto neighbouring Fishnish B site before being moved into Fishnish A in Dec 22. The site was also stocked with wrasse during the summer months over several inputs in June, July, August and September. Since input the site has lost ~50% of the wrasse. A total of 26,206 was input into the site, and the majority (12, 854) were lost during a FW treatment in December 22.
The wrasse that were observed on site generally appeared in good physical health. There were a handful of individuals observed across the site were slightly lethargic.

Mortality events above reporting threshold:
Wk37 2023: 4,364 (1.11%), wk38: 11,319 (2.92%), wk39: 5229 (1.39%), wk40: 4160 (1.12%), wk43: 5587 (1.54%).

Slice was administered in June, followed by a FW treatment in May, thermolicer treatments in June and July and an Aquatet treatment in September.

Moribunds were observed in all cages, but low numbers (~1-2). 5 moribunds were removed from cage 2 which was the worst affected cage in terms of mortality and diagnostic samples taken. Several poor performing fish were observed, particularly in cage 4. These were not moribund but were anorexic and some spinal deformities were noted.

Fish sampled for VMD appeared in good physical health externally, internally and responded well to feed.

Site staff informed inspector during visit that a seal had entered one of the cages on site recently. This had not been reported to the FHI as required and a retrospective notification was requested. Cage 4 was slightly mishapen which the site manager had attributed to strong currents at the site and a spell of bad weather recently. This had resulted in the top net being stretched and it had lifted away from the bottom net, leaving large gaps where predators could ingress.

Inspection and paperwork completed by [redacted], observed by [redacted]

Case No:	2023-0543	Site No:	FS0427
Date of Visit:	28/11/2023	Inspector(s):	[redacted]

Registration/Authorisation Details

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

Site Details (include cleaner fish for all sections)

Total No facilities	4			3	No facilities inspected		4
Species	SAL	WRA					
Age group	22 Q3	Wildcaught					
No Fish	325,817	13,352					
Mean Fish Wt	3.7kg	60g					
Next Fallow Date (Site)	June 24		Next Input Date (Site)	Dec 24			
Recent (last 4 wks) disease problems?		Y	Any escapes (since last visit)?				N
If yes, detail:	Furunculosis, AGD and PGD						

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	04/04/2023
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	Y

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?	Y
2. How are mortalities disposed of?	Biogas - Barkip
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	Wk47: 12,433 (3.68%), Wk46: 7,894 (2.28%), Wk45: 3388 (0.97%), Wk44: 6767 (1.90%)
5. Evidence of recent increased/atypical mortalities?	Y

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

Furunculosis and stock orgin (stofinfisker) stock arent performing as well. Big difference in size. Fish are lethargic, but gills looks ok.

6. Any other peaks in mortality during period checked?	Y
If yes, detail:	Same as above
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	Tricaine, optomease
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)?	Aquatet and optomease
If other, detail:	
6. Are medicines stored appropriately?	Y

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* (*unexplained)* mortality at the site 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 been included and *how* and *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, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (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 held on site?	
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?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	
Records checked between:	04/04/23 - 28/11/23

Case no:	2023-0543	Site No:	FS0427	Date of visit/ Sampling:	28/11/2023	28/							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	15:45:00	16:00:00	Inspector:		VMD No.	9							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA	Y	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5							
	Fish nos	1	2	3	4	5	6-7						
	Pool Group	P1	P2	P3	P4	P5							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL	SAL						
	Average weight	3.7kg	3.7kg	3.7kg	3.7kg	3.7kg	3.7kg						
	Sex	N/A	N/A	N/A	N/A	N/A	N/A						
	Water Type	SW	SW	SW	SW	SW	SW						
	Stock Origin	Brcaldine Smolt Unit	Brcaldine Smolt Unit	Brcaldine Smolt Unit	Brcaldine Smolt Unit	Brcaldine Smolt Unit	Barcaldine Smolt Unit						
	Facility No	2	2	2	2	2	2						

11/2023	Additional Sample Information:
	Fish were humanely dispatched by percussive blow.

5 Total Tests assigned 4

Case no: 2023-0543 Site No: FS0427 Method of killing: Percussive

Date of visit: 28/11/2023 Inspector(s): [redacted] Sheet Relevant: Y

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

Fish Number		F1	F2	F3	F4	F5					
Time sampled after death (if > 45 minutes)		45mins	55mins	65mins	75mins	85mins					
External Signs											
Behaviour	Moribund	M	M	M	M	M					
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic					W					
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract		W		W						
	Haemorrhagic										
Gills	Pale	S	S	S	S	S					
	Zoned	M	M			M					
	Necrotic			W	W						
Lesions	Flank										
	Elsewhere										
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers	0	0	0	2	0					
Internal Signs											
Ascites	Clear										
	Bloody				S						
Oedema	In tissues										
Heart	Pale/anaemic	W	W	M	M						
	Granulomas										
	Deformed	W									
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	3	2	2	5	3					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat				S						
Spleen	Enlarged					M					
	Granulomas										
Gut	No food present										
	Yellow pseudo-faeces	S	S	S	S	S					
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey		W	W	W	W					
	Granular										
	Liquefied				W						
General	Parasites present				W						
	Anaemia										

Case no: 2023-0543

Date of visit: 28/11/2023

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

F2 - eye had burst on left side.

Site No: FS0427

Case No: 2023-0543

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2023-0543 Date of visit: 28/11/2023

Site No: FS0427 Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG_AGD	5/5	11/12/2023		11/12/2023		23/01/2024		
MG_SAL_POX	1/5	11/12/2023		11/12/2023		23/01/2024		
MG_PARA_THER	5/5	11/12/2023		11/12/2023		23/01/2024		
Vibrio sp.	4/5	12/12/2023		12/12/2023		23/01/2024		
MG_IHN	0/5	12/12/2023		12/12/2023		23/01/2024		
MG_IPN	0/5	12/12/2023		12/12/2023		23/01/2024		
MG_ISA	0/5	12/12/2023		12/12/2023		23/01/2024		
MG_PMCV	1/5	12/12/2023		12/12/2023		23/01/2024		
MG_SAV	0/5	12/12/2023		12/12/2023		23/01/2024		
MG_VHS	0/5	12/12/2023		12/12/2023		23/01/2024		
AMGD	3/5	15/01/2024		16/01/2024		23/01/2024		
CGDH	5/5	15/01/2024		16/01/2024		23/01/2024		
EPIT	1/5	15/01/2024		16/01/2024		23/01/2024		
GPAT	5/5	15/01/2024		16/01/2024		23/01/2024		
LPAT	4/5	15/01/2024		16/01/2024		23/01/2024		
HPAT	5/5	15/01/2024		16/01/2024		23/01/2024		
SPAT	3/5	15/01/2024		16/01/2024		23/01/2024		
SKIN	1/5	15/01/2024		16/01/2024		23/01/2024		

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA, REP	23/01/2024		
Case completion	30/01/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0125	**DATE OF VISIT**	28/11/2023
SITE NO	FS0427	**SITE NAME**	Fishnish (A)
CASE NO	20230543	**INSPECTOR**	[redacted]

Section 1: Summary

The site was inspected due to recent mortality reports above the reporting threshold, all attributed to poor gill health. Five fish were selected for diagnostic sampling.

Histopathology examination revealed features resembling complex gill issues. Amoebic gill disease (AGD) was observed and *Neoparamoeba perurans* was confirmed by qPCR. Proliferative branchitis was also present. Hepatocellular necrosis and necrotising splenitis were also observed. Although mild myocarditis was observed, in some fish the pathology could be related to the presence of piscine myocarditis virus (PMCV), confirmed by qPCR. One fish also displayed areas of potential heart degeneration.

Paranucleospora theridion and salmon gill poxvirus (SGPV) were also detected by qPCR.

Vibrio sp. was identified, and although the level and purity of growth observed would suggest this bacterium may be implicated in the gill health of these fish it would not suggest it would be implicated in morbidity overall.

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

Fishnish (A) was inspected due to recent mortality reports above the reporting criteria, all attributed to poor gill health which resulted in the loss of 30,482 fish in the 4-week period prior to the inspection. At the time of inspection, the site was stocked with 325,817 S1 Atlantic salmon at an average weight of 3.7kg originating from the Barcaldine Smolt Unit (FS1328). All cages were inspected and moribunds were observed in each stocked cage but in low numbers (~1-2). Five moribunds were removed from cage 2 which was the worst affected cage in terms of mortality and diagnostic samples taken. Several poor performing fish were observed, particularly in cage 4. These were not moribund but were anorexic with some displaying spinal deformities.

Externally, F5 was anorexic and cataracts were observed in the eyes of F2 and F4 (the left eye of F2 had burst). The gills of all five fish were pale/anaemic, zoning was observed in F2-3 and F5 and necrosis of the gills was evident in F3-4. Lice loads were low, with F1-3 and F5 having no lice. Two lice were observed on F4.

Internally, bloody ascites was observed in F4. The hearts of F1-4 were pale/anaemic and was also deformed in F1. The pyloric caeca of F4 was lacking fat and the spleen of F5 was enlarged. Yellow pseudo-faeces were present in the guts of all five fish. The kidney was slightly grey in colour in F2-5 and was mildly liquefied in F4.

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Samples

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

Fish number	Facility number	Species	Stage	Origin
F1- F5	2	Atlantic salmon (*Salmo salar*)	2022 S1 3.7kg	Barcaldine Smolt Unit (FS1328)

Results

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

The following bacteria were isolated:

- *Vibrio* sp. (Gills: F2-F5)

From the tests conducted, we do not have evidence of resistance to amoxycillin, oxytetracycline, sulphamethoxazole/trimethoprim or florfenicol.

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

Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	15.67	19.23	19.10	19.04	POSITIVE
F4	-	-	-	-	Negative
F5	-	-	-	-	Negative

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	-	-	-	-	Negative
F4	19.67	37.80	36.23	37.76	POSITIVE
F5	-	-	-	-	Negative

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

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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	19.51	28.19	28.18	28.19	POSITIVE
F2	19.94	28.25	28.27	28.45	POSITIVE
F3	19.77	27.62	27.16	27.38	POSITIVE
F4	19.67	25.42	25.47	25.38	POSITIVE
F5	19.66	28.80	28.92	28.96	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.51	34.24	34.98	34.65	POSITIVE
F2	19.94	29.26	29.00	29.20	POSITIVE
F3	19.77	26.39	26.26	26.41	POSITIVE
F4	19.67	28.30	28.33	28.20	POSITIVE
F5	19.66	28.74	28.58	28.67	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:

Gill: Lamellar hyperplasia and fusion, ranging from mild to moderate, multifocal (F2, F3, F4, F5) with some vascular disturbance and small foci of cellular necrosis (F3, F4, F5) with Gram-negative rod-shaped bacteria (F4). F5 also displayed one filament with necrosis. Bluntness of filament tips (F1). Some basophilic epithelial inclusions (likely epitheliocystis) F1 and presence of few amoeboid cells resembling *Neoparamoeba perurans* observed in F3, F4, F5. Some aneurysmal dilation/telangiectasia (F1, F3, F5). Free blood among gill filaments (F1).

Skin & Muscle: Dermatitis with necrosis, minor, focal (F1).

Heart: Myocarditis, mild, multifocal (F1, F2, F3). Some minor necrosis (F5). Areas of light H&E stain observed in the compact layer (F3). Epicarditis with rod-shaped bacteria (F4). Some thrombi (F4).

Gut and pyloric caeca: Abdominal adipose haemorrhage (small foci), mild, multifocal (F4).

Pancreas: F3: Almost no tissue present.

Liver: Hepatocellular necrosis, ranging from mild to moderate, multifocal to coalescence (F1, F4). some cuffing (F1). Mild, diffuse hepatocellular vacuolation (macrovesicles) (F2, F4, F5). Some sinusoidal vacuolations, focal, observed in F5. F3: Liver not present in section.

Kidney: Interstitial cell (haemopoietic) necrosis, multifocal (F2, F4, F5) and F3, F4 and F5 observed some circulating inflammatory cells.

Spleen: Some evidence of erythrophagocytosis (F3). Cellular necrosis, mild, multifocal (F4, F5).

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Section 3: Issues Raised

During the inspection under the Aquatic Animal Health (Scotland) Regulations 2009, 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 appeared to be inadequately maintained. The following points were raised with the site representative during the inspection:

- Movements of lumpfish were not recorded. Records must be updated to include all movements on and off the site.

The biosecurity measures plan for the site was inspected and found to be inadequately maintained. The following points were raised with the site representative during the inspection:

- Mortality storage and disposal inaccurate. BMP should be updated to reflect current practice.

Medicine records were inspected under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015 and found to be inadequately maintained. The following points were raised with the site representative during the inspection:

- Tricaine use was recorded in medicine record when Optomease was used. Records should be updated to reflect correct treatment.

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, containment and escapes. However, recommendations were issued in relation to the farm management statement and the non-reporting of circumstances which give rise to a significant risk of an escape:

- The farm management statement was inspected and it was found that the site was not managed and operated in accordance with the farm management statement. It was noted that mortality storage and disposal procedures described in the farm management statement did not reflect the current practice on site. Either the site must be operated in accordance with the farm management statement or the farm management statement must be updated to reflect the current practices on site to ensure compliance with the legislation.

- Staff informed inspector during visit that a seal had entered a cage recently but the circumstance which gave rise to a significant risk of escape was not reported to Scottish Ministers as required by the current policy. Initial and final escapes notifications must be submitted retrospectively.

These issues were communicated to the business correspondent on 7th December 2023 and the submission deadline for evidence that these points have been addressed was set as 30 days from 12th December 2023.

Partial evidence that the above points have been addressed was submitted on 19th January 2024. However, some evidence is still outstanding. The outstanding documents should be submitted before the 29th January 2024.

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

Signed: [redacted] Date: 23/01/2024

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at Fish Health Inspectorate Service Charter - gov.scot (www.gov.scot)

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FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0125	**DATE OF VISIT**	28/11/2023
SITE NO	FS0427	**SITE NAME**	Fishnish (A)
CASE NO	20230543	**INSPECTOR**	[redacted]

Case completion report

Issues were raised in relation to the above case, with a requirement for records to be submitted by 26th July 2024. The required records have now been provided to the Fish Health Inspectorate.

This case will now be closed. This site may be subject to further audit and recommendations in the future.

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

Signed: [redacted] Date: 30/01/2024

Fish Health Inspector

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F1 –

F2 –


F2

F3 –

F4 –

F5 –