

Case No:	2024-0436	Date of visit:	13/11/2024			
Time spent on site:	5hrs	Main Inspector:				
Site No:	FS1286	Site Name:	Muck			
Business No:	FB0119	Business Name:	Mowi Scotland Ltd			
Case Types:	1 ECI	2 CNI	3 SLI	4 DIA	5	6
Water Temp (°C):	12.7	Thermometer No:	T172	FHI 045 completed	N/A	
Observations:	Region:	HI	Water type:	S	CoGP MA:	None
Dead/weak/abnormally behaving fish present?	<input type="checkbox"/>	If yes, see additional information/clinical score sheet.				
Clinical signs of disease observed?	<input type="checkbox"/>	If yes, see additional information/clinical score sheet.				
Gross pathology observed?	<input type="checkbox"/>	If yes, see additional information/clinical score sheet.				
Diagnostic samples taken?	<input type="checkbox"/>					

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

**Additional Case Information:**

Fish were moved on from Etive 6 in September (from DMA 15b to 15e). A RA for the SW to SW movement was available. SRS has been identified on site (particularly liver lesions, rather than external lesions). Antibiotic treatment successfully completed end of October and bacterial load has lessened. Jellyfish (Apolemia) on site are now the main cause of mortality. Gill damage consistent with PGD but mild. HSML has also been observed with blood clots around the heart noted. PCRs positive for HSML, Teancibaculosis and Piscirickettsiosis. Fish have been vaccinated with Alphaject Micro6, PD1 and against Yersinia and Pasteurella.

FW treatments since input with FLS have had good clearance rates.

Although site does not fall within a CoGP MA and so is not required to maintain a FMS, one has been created and was available for inspection. Fallow dates are synchronised on a single year class basis with the sites nearest neighbour, Rum FS1317.

Several moribunds were observed in each of the cages, with more observed in cages 1, 2, 5 and 8. Five fish were removed from across the site for diagnostic sampling. The general population on site appeared in good body condition and were active in the cages with lots of jumping behaviour observed. Fish from cage 4 were removed for a lice count which was observed by the inspector. Very few lice were observed on these fish and they were in good physical condition with some minor damage to fins.

Site manager was informed that the cleanerfish at Etive were culled prior to transfer of salmon to Muck. However, the VHWP and RA stated that wrasse would be transferred with the salmon. Wrasse were observed across the site in several cages and this was raised with the site manager at the time of the inspection. The movement records were updated to include the transfer of cleanerfish to the site and the site manager was reminded that any mortalities must be recorded going forward.

Updated movement records including the transfer of wrasse to site were received 05/12/24.

Case No: 2024-0436

Site No: FS1286

Date of Visit: 13/11/2024

Inspector(s):

**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	8	Facilities stocked	8	No facilities inspected	8
Species	SAL	WRA			
Age group	24Q1	Wildcaught			
No Fish	1,087,176	3,354			
Mean Fish Wt	1.15kg	Mixed			
Next Fallow Date (Site)	June 25	Next Input Date (Site)	Sep/Oct 25		
Recent (last 4 wks) disease problems?		Y	Any escapes (since last visit)?		N
If yes, detail:	SRS, HSMI, PGD				

**Movement Records**

1. Movement records available for inspection?

Y

2. Date of last inspection:

26/04/2022

3. Are records complete and correctly entered?

N

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?

Ensiled - on site

If other detail: Ensiled on barge, uplifted and taken to Pelagia

3. Mortality records complete and correctly entered?

Y

4. Recent mortality (last 4 wks): Wk45: 18,814 (1.71%), Wk44: 52,934 (4.6%), Wk43: 52,932 (4.39%), Wk42: 64,152 (5.06%), Wk41: 34,818 (2.67%)

5. Evidence of recent increased/atypical mortalities?

Y

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

Mortality has been highest in pens 1, 2 and 8. Attributed to SRS, HSMI and environmental.

6. Any other peaks in mortality during period checked?

Y

Wk40 2024: 22,330 (2.4%), Wk39: 10,223 (1.6%).  
Wk48 2023: 9,703 (1.31%), Wk45: 8,039 (1%), Wk32: 1,502 (2.6%), Wk31: 2,092 (2.17%), Wk30: 2,021 (1.42%), Wk29: 4,215 (2.69%), Wk28: 2,896 (1.37%).

If yes, detail: Wk38 2022: 1,225 (2.11%), Wk37: 64,473 (15.54%), Wk36: 98,953 (13.79%), Wk35: 16,009 (2.18%)

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)?	<input type="checkbox"/>	Y
If yes, detail: TMS, Florfenicol		
If other, detail:		
2. Medicines records available for inspection?	<input type="checkbox"/>	Y
3. Are records complete and correctly entered?	<input type="checkbox"/>	Y
4. Are fish in a withdrawal period?	<input type="checkbox"/>	Y
5. If yes, what treatment(s)?	TMS, Florfenicol	
If other, detail:		
6. Are medicines stored appropriately?	<input type="checkbox"/>	Y

**Biosecurity Records**

1. Biosecurity records available for inspection?	<input type="checkbox"/>	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	<input type="checkbox"/>	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any <i>increased (unexplained)</i> mortality at the site been included?	<input type="checkbox"/>	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 <i>how</i> and <i>when</i> that will be notified to Scottish Ministers?	<input type="checkbox"/>	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)?	<input type="checkbox"/>	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.)?	<input type="checkbox"/>	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	<input type="checkbox"/>	Y
8. Have the biosecurity procedures been adequately implemented on site?	<input type="checkbox"/>	Y
If no, detail:		

**Results of Surveillance**

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	<input type="checkbox"/>	Y
2. If yes, are results available for inspection?	<input type="checkbox"/>	Y
3. Any significant results?	<input type="checkbox"/>	Y
If yes, detail (if not detailed under recent disease problems). SRS, HSMI and PGD		

Records checked between:

26/04/22 - 13/11/24

Case No: 2024-0436

Site No: FS1286

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

**Containment Inspection**

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

Sealpro nets, top nets.

If other, detail below:

3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?

If Yes proceed with questions 4 – 9. If No skip to question 10

4. Have these been reported to Scottish Ministers?
5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)

7. Were methods (if any) used to recover escapees? If yes give detail

8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)

9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)

10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)

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Site No: FS1286

Date of Visit: 13/11/2024

Inspector: [REDACTED]

**Point of Compliance**

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

N

If N, no further questions require completion.

**Points of Compliance for Both Farm Management Agreements and Statements**

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

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

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

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

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

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

**Arrangements for Fish Health Management**

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

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

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

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

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

**Arrangements for The Management of Sea Lice**

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

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

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

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

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

**Live Fish Movements**

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

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

**Harvesting**

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

**Fallowing**

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

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

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

**Point of Compliance for Farm Management Agreements Only**

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

**Management and operation**

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

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

Case Number:	2024-0436	Site No:	FS1286	Insp:		
Date of Visit	13/11/2024	No of movements/supp./dest.			Score	
<b>Live fish movements</b>		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	10
	Number of destinations	0	3	6	10	3
<b>Exposure via water</b>	<b>Site contacts</b>	0	1-5	6-10		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		1
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
<b>Management practices</b>		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				
	Processing own fish (re-cycling risk)	1				1
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				0
	Common processes with other farms	3				
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
<b>Biosecurity</b>	<b>Number of sites</b>	1	2 or 3	≥ 4		
Contacts with other sites	Sites operating from single shorebase	0	1	2		0
	Sites sharing staff and equipment	0	1	2		0
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
<b>CoGP/Regulator</b>						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
<b>Total Rank</b>					<b>15</b>	<b>LOW</b>



Case no: 2024-0436 Site No: FS1286 Date of visit/ Sampling: 13/11/2024 13/

Priority samples: VI BA PA MG HI

Time sampling starts/ends: 11:00:00 12:15:00 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												
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
		Loch Etive 6 FS1288	Loch Etive 6 FS1288	Loch Etive 6 FS1288	Loch Etive 6 FS1288	Loch Etive 6 FS1288							
	Stock Origin												
	Facility No	8	6	1	1	5							

11/2024

### Additional Sample Information:

Fish were humanely dispatched by percussive blow.

5

Total Tests assigned

5

[illegible]

Case no:	2024-0436	Site No:	FS1286	Method of killing:	Percussive
Date of visit:	13/11/2024	Inspector(s):		Sheet Relevant:	Y

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

Fish Number		1	2	3	4	5					
Time sampled after death (if > 45 minutes)		45	60	75	90	105					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic										
	Hanging vertical	S				S					
	Spiralling			S	S						
	Flashing										
	Loss of equilibrium	M		M	M						
Body	Dark	S	S	S	S	S					
	Distended abdomen			W							
	Anorexic		W			S					
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic			W							
Gills	Pale	W	W	W	W	S					
	Zoned										
	Necrotic					W					
Lesions	Flank										
	Elsewhere										
Vent	Inflamed			W							
	Trailing faeces										
Lice Load	Estimate numbers	3	6	4	2	5					
Internal Signs											
Ascites	Clear										
	Bloody	S	W		S						
Oedema	In tissues										
Heart	Pale/anaemic	M	M	S	S	S					
	Granulomas										
	Deformed										
Liver	Petechial haem				W						
	Gross haem										
	Tissue breakdown										
	Enlarged	S	S	W	S	M					
	Colour number(s)	7	6	7	6	6					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat				S	M					
Spleen	Enlarged	W	W	M	M	M					
	Granulomas										
Gut	No food present		S	M							
	Yellow pseudo-faeces	S			S	S					
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2024-0436

Date of visit: 13/11/2024

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

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: FS1286
Case No: 2024-0436
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



Case No:

2024-0436

Date of visit:

13/11/2024

Site No:

FS1286

Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 <sup>nd</sup> Insp
MG- P. salmonis	5/5	15/11/2024		15/11/2024				
MG-P. theridion	5/5	15/11/2024		15/11/2024				
MG- SGPV	4/5	15/11/2024		15/11/2024				
MG-AGD	0/5	15/11/2024		15/11/2024				
MG-ISA	0/5	15/11/2024		15/11/2024				
MG-IHN	0/5	15/11/2024		15/11/2024				
MG-VHS	0/5	15/11/2024		15/11/2024				
MG-CMS	0/5	15/11/2024		15/11/2024				
MG-SAV	0/5	15/11/2024		15/11/2024				
MG-IPN	0/5	15/11/2024		15/11/2024				
AERO	4/5	03/12/2024		03/12/2024				
GPAT	5/5	05/12/2024		05/12/2024				
EXOP	1/5	05/12/2024		05/12/2024				
SKIN	1/5	05/12/2024		05/12/2024				
KPAT	4/5	05/12/2024		05/12/2024				
LPAT	2/5	05/12/2024		05/12/2024				

Report Summary			
Case Type	Date	Insp	2 <sup>nd</sup> Insp
ECI, CNI, SLI	15/11/2024		
DIA	12/12/2024		
Case completion	06/12/2024		



# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	13/11/2024
<b>SITE No</b>	FS1286	<b>SITE NAME</b>	Muck
<b>CASE No</b>	20240436	<b>INSPECTOR</b>	

### Section 1: Summary

The site was inspected due to recent mortality reports above the reporting threshold, all attributed to salmonid rickettsial septicaemia (SRS) caused by the bacterium *Piscirickettsia salmonis*, and environmental insult. Five fish were selected for diagnostic sampling.

Histopathology examination revealed mild gill pathology. One fish displayed evidence of SRS which was confirmed by qPCR. F2 exhibited granulomas with limited number of hyphae (likely *Exophiala*).

*Paranucleospora theridion* and salmon gill poxvirus were detected 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

Muck was inspected due to recent, consecutive mortality events above the reporting criteria, all attributed by the business to SRS and environmental insult, resulting in the loss of 259,967 fish in a 7-week period. At the time of inspection, the site was stocked with 1,087,176 Q1 Atlantic salmon at an average weight of 1.15kg originating from Etive 6 (FS1288). These were stocked alongside wild caught wrasse of mixed average weight. All the cages on site were inspected and five moribund fish were removed from cages 1, 5, 6 and 8 for diagnostic sampling.

All fish were moribund. F1 was hanging vertically in the water demonstrating a loss of equilibrium and F3 and F4 were spiralling. Externally, all fish were dark in colour with F3 having a distended abdomen, while F2 and F5 were anorexic. The eyes of F3 were haemorrhagic and the gills of all fish were pale in colour, with F5 also showing some necrosis of the gills. The vent was slightly inflamed on F3 also.

Internally, bloody ascites was observed in F1, F2 and F4 and the heart was pale/anaemic in all five fish. Petechial haemorrhaging was noted on the liver of F4 and was enlarged in all fish to varying extents.

A lack of fat was noted surrounding the pyloric caeca of F4 and F5 and the spleens were enlarged in F1-F5. No food was present in the gut of F2-F3 and yellow pseudo-faeces were present in the gut of the remaining fish.



## Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	8	Atlantic salmon	2024 Q1; 1.15kg	Etive 6, FS1288
F2	6	Atlantic salmon	2024 Q1; 1.15kg	Etive 6, FS1288
F3-F4	1	Atlantic salmon	2024 Q1; 1.15kg	Etive 6, FS1288
F5	5	Atlantic salmon	2024 Q1; 1.15kg	Etive 6, FS1288

## Results

**Bacteriology:** Kidney and gill material from F1-F5 were inoculated onto appropriate media for the isolation of bacteria.

The following bacterium was isolated:

- *Aeromonas* sp. :F1, F3-F5 (Gill);

*Aeromonas* sp. was identified. The level and purity would suggest that they are of environmental origin and are not present as primary fish pathogens.

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

### *Piscirickettsia salmonis*

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	18.5	34.35	34.77	35.01	POSITIVE
F2	18.78	29.91	29.78	29.82	POSITIVE
F3	18.72	32.37	32.21	32.15	POSITIVE
F4	19.23	34.91	34.73	35.09	POSITIVE
F5	18.88	34.27	34.36	33.86	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).

*Salmon gill poxvirus (SGPV)*

Fish Number		Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1		-	-	-	-	Negative
F2		18.89	34.70	34.46	35.31	POSITIVE
F3		19.06	24.72	24.97	25.09	POSITIVE
F4		18.84	28.94	29.12	28.89	POSITIVE
F5		19.19	25.96	25.99	26.01	POSITIVE

**Parasitology:** Tissue samples 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	19.26	27.37	27.39	27.45	POSITIVE
F2	18.89	23.32	22.68	23.14	POSITIVE
F3	19.06	24.90	24.38	24.63	POSITIVE
F4	18.84	24.87	23.74	24.67	POSITIVE
F5	19.19	21.94	22.01	21.73	POSITIVE

The samples tested negative for *Neoparamoeba perurans* (AGD).

**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: Filament branchitis with necrosis (F2, F3, F5) and few round blue structures resembling bacteria that Gram-negative (likely *Piscirickettsia* sp.) (F2). F5 also displayed a copepod-like structure among gill filaments. Lamellar telangiectasia (F1-F5). Some post-mortem artefacts also observed (F1-F4).

Skin & Muscle: Extended focal area of white musculature degeneration with small foci of cellular inflammation (F2).

Heart: Minimal myocarditis (F1, F5). Few small thrombi (F3). Mild, epicarditis (F1-F5).

Gut and pyloric caeca: Peritonitis, mild-up-to- moderate (F1, F3, F5). F4 displayed reduced adipose tissue.

R09



Pancreas: Within the normal range.

Liver: Some vasculitis (F1). F2 displayed a small granuloma-like structure with giant cells, limited number of hyphae and an area of mineralisation. Some hepatocellular vacuolation (macrovesicles) (F5).

Kidney: Granuloma-like structure with few giant cells (F2, F4) and in F2 limited number of hyphae observed. Some renal tubules also displayed lumen dilation filled with some cell debris (F4). Hyaline droplets observed on the lining epithelium of few renal tubules (F2, F3, F4, F5).

Spleen: Mild-up-to-moderate congestion. Some capsulitis (F5).

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



Signed:

Date: 12/12/2024

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 \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)



# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	13/11/2024
<b>SITE No</b>	FS1286	<b>SITE NAME</b>	Muck
<b>CASE No</b>	20240436	<b>INSPECTOR</b>	[REDACTED]

### Case completion report

Issues were raised in relation to the above case, with a requirement for records unavailable for inspection to be submitted by 27<sup>th</sup> December 2024. The required records have now been provided to the Fish Health Inspectorate.

Once the diagnostic report for this case has been issued, the case will 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:

Date: 06/12/2024

Fish Health Inspector

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# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	13/11/2024
<b>SITE No</b>	FS1286	<b>SITE NAME</b>	Muck
<b>CASE No</b>	20240436	<b>INSPECTOR</b>	

### 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. 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 low. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every third 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.

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.



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

- The transfer of cleanerfish onto site had not been recorded in the movement records. The movement records for the site must be updated to include these movements of live fish.

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 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:

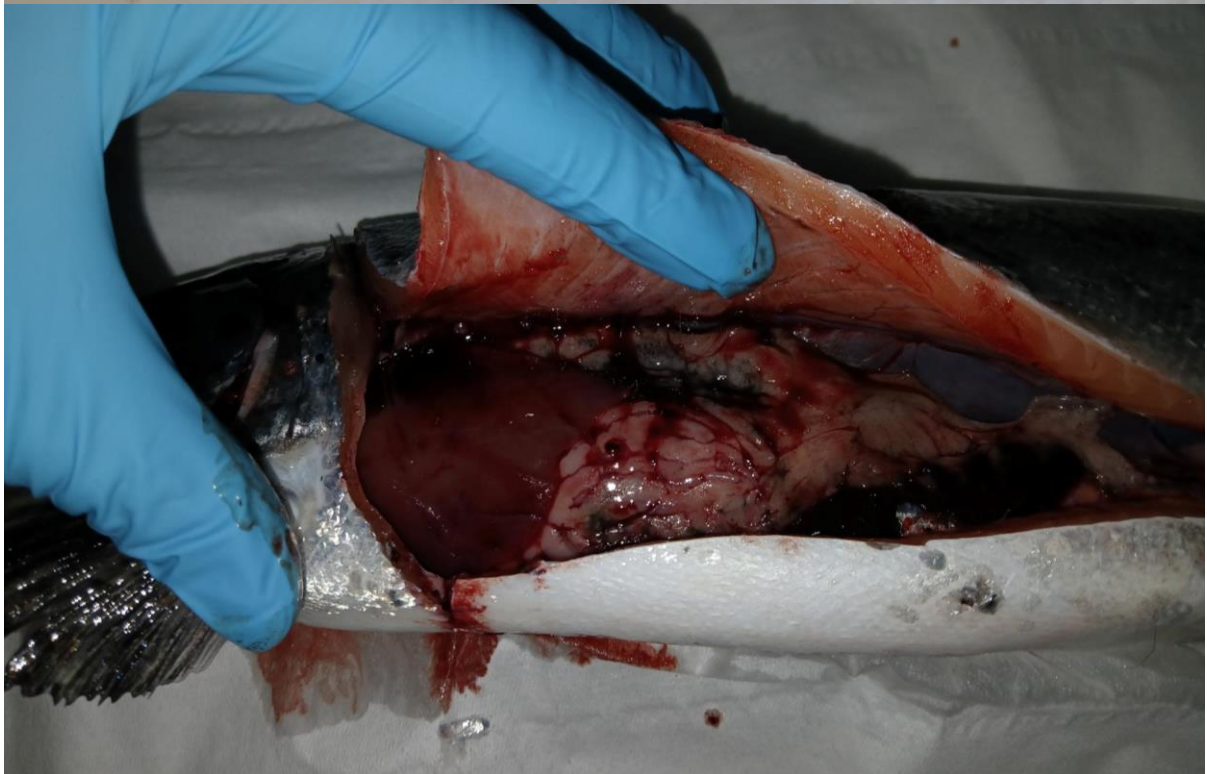
Date: 15/11/2024

Fish Health Inspector

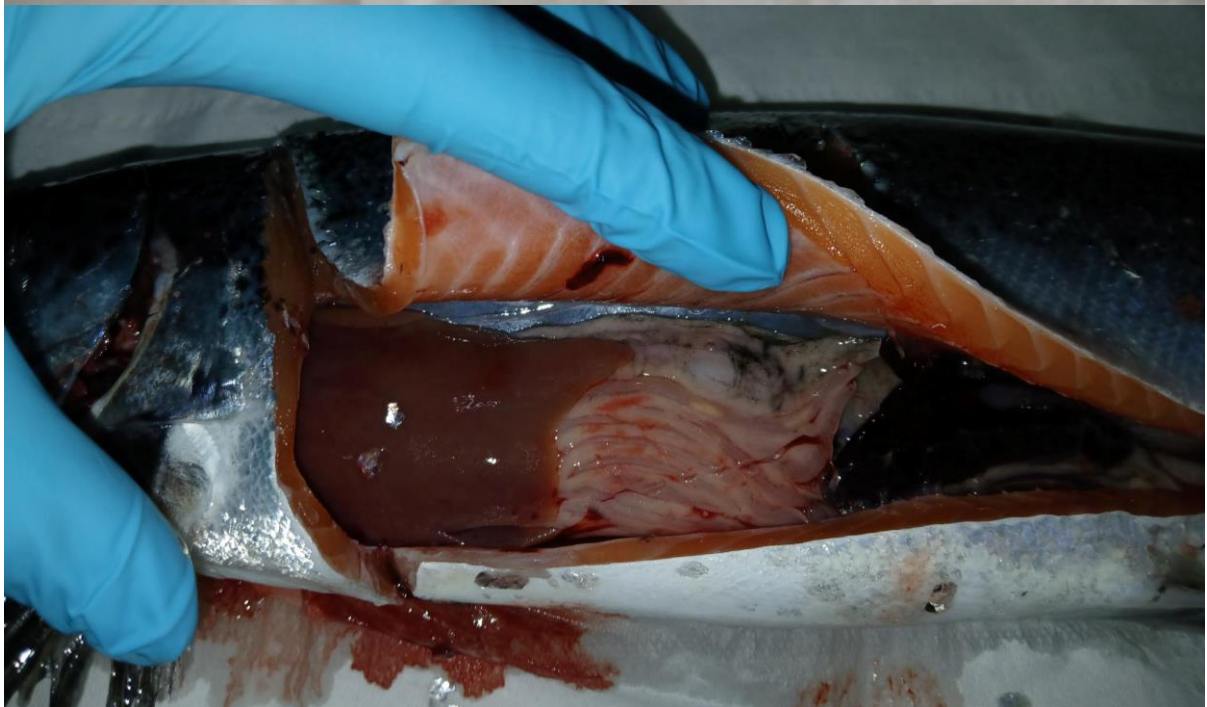
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F1 -



F2 –



F3 –



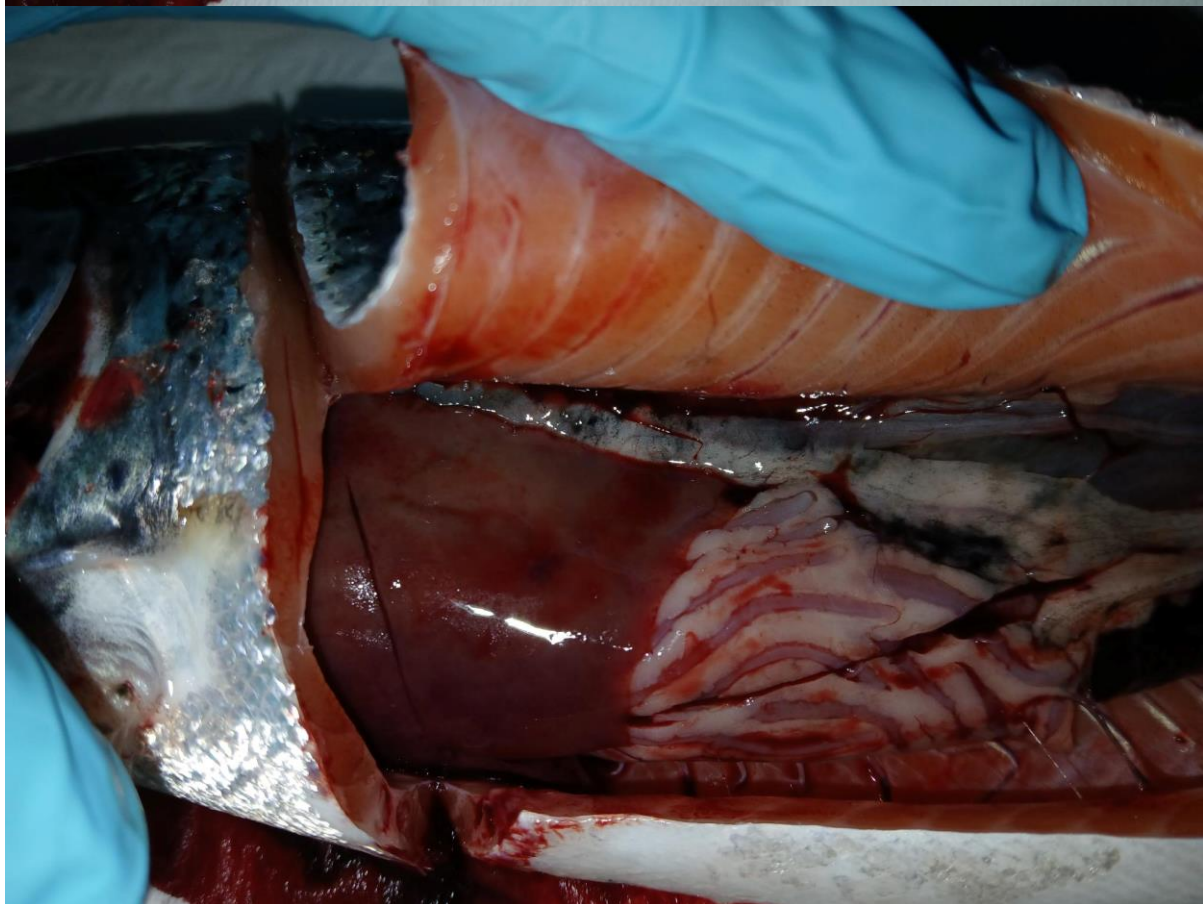
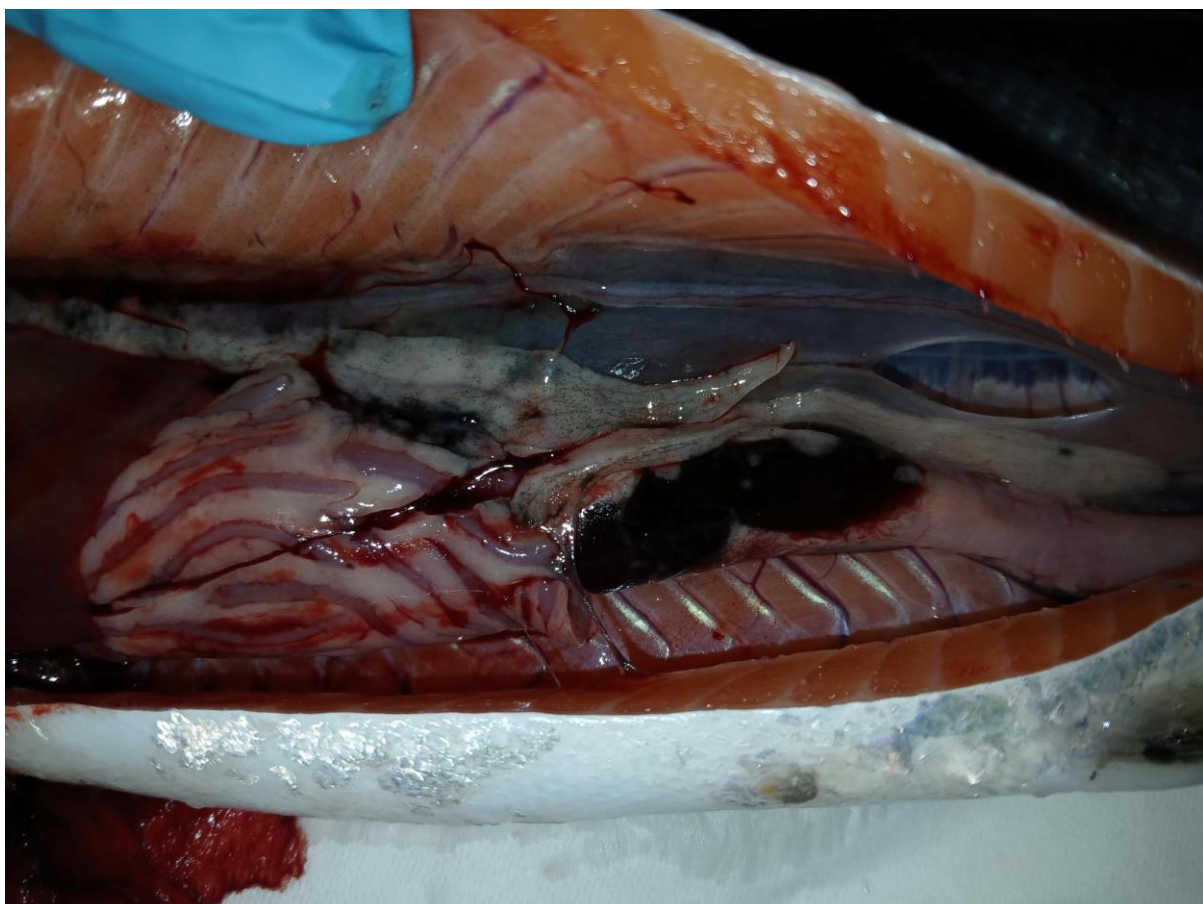




F4 –







F5 –

