Case No: 2021-0336 Date of visit: 06/10/2021

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

Site No: FS1260 Site Name: Sound of Harris
Business No: FB0398 Business Name: Loch Duart Ltd

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

Water Temp (°C): 12.4 Thermometer No: T148 FHI 045 completed

Observations: Region: WI 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:

Mortality related to AGD has been seen across all pens. Specifically, the smaller grades more affected.
Failed smolts seen during wk8 to wk10 and fish with fungus was noted. Transferred from Ormsary and Clachbreac. Low level plankton observed throughout the cycle. Fish transferred from Oldany/Clashnessie for top up of stock following gill issues on site in Autumn 2020.

Locally, wild caught ballan WRS. Since the start of the cycle.

Site holding future broodstock fish. 5000 fish will be kept and transferred to Oldany/Clashnessie Bay.

All harvests are by deadhaul.

Site is not currently located in a CoGP Farm management area

Cleanerfish Mortality per production cycle:
2018 571 ballan wrasse
2020 2513 ballan wrasse; 940 lumpfish

Number of lethargic fish seen in all pens Five fish removed from one pen for diagnostic sampling.

Remote inspection conducted by [redacted] and supervised by [redacted] on 28/09/2021.
Site inspection conducted by [redacted], shadowed by [redacted] on 06/10/2021.
VMD sampling conducted by [redacted] and supervised by [redacted] on 06/10/2021.
Diganostic taken by [redacted] and [redacted] on 06/10/2021.

Case No: 2021-0336 Site No: FS1260

Date of Visit: 06/10/2021 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		20	Facilities stocked		11	No facilities inspected		20
Species	SAL	WRS						
Age group	S1 2020	mixed						
No Fish	106,400	6,700						
Mean Fish Wt	5.57kg	120g						
Next Fallow Date (Site)		Nov 2021	Next Input Date (Site)			April 2022		
Recent (last 4 wks) disease problems?			Y	Any escapes (since last visit)?				N
If yes, detail:	AGD (gill problems)							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	24/07/2018
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)?	N
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:	Whiteshore Cockles- landfill,
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	SAL: Wk38, 5850, 5.47%; Wk37,6990, 6.13%; Wk36, 6087,4.19%; Wk35,
5. Evidence of recent increased/atypical mortalities?	Y
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
across the site (AGD/poor gill health)	
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?	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).	AGD detected/positive , August 2021
Records checked between:	24/07/2018-28/09/2021

Case no:	2021-0336	Site No:	FS1260	Date of visit/ Sampling:	06/10/2021	06/1							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	13:30:00	15:00:00	Inspector:		VMD No.	5							
Environmental conditions:	1	Windy	2	Cloudy	3	Dry	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	P1						
	Fish nos	1	2	3	4	5	1-5	6					
	Pool Group	P1	P1	P1	P1	P1							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL					
	Average weight	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg		5.5kg					
	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	Clachbreac (FS0892)	Clachbreac (FS0892)	Clachbreac (FS0892)	Clachbreac (FS0892)	Clachbreac (FS0892)	Clachbreac (FS0892)	Clachbreac (FS0892)					
	Facility No	11	11	11	11	11		14					

10/2021 Additional Sample Information:

Fish 1 & 2 sampled by ALW
Fish 3-5 sampled by AZM supervised by ALW

6 Total Tests assigned 3

Case no: 2021-0336 Site No: FS1260 Method of killing: Percussive

Date of visit: 06/10/2021 Inspector(s): [redacted] Sheet Relevant: N

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)		13:30	13:30	14:00	14:00	14:45					
External Signs											
Behaviour	Moribund										
	Lethargic	S	S	S	S	S					
	Hanging vertical		S								
	Spiralling										
	Flashing										
	Loss of equilibrium			S							
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere	S			S						
Eyes	Exophthalmic										
	Enophthalmic (sunken)			M							
	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		W								
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	6	2	4	6	7					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged										
	Granulomas										
Gut	No food present										
	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: 2021-0336

Date of visit: 06/10/2021

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:

F1- Externally, haemorraghing on the belly was significant, as well as gills were found to be ragged. Internally, F1 possessed strong adhesions. Spleen texture was noted to have a tongue-like shape and rough appearance/texture. Pseudofaeces was present in hind gut.

F2- Fish was found hanging vertically in the water. Gills were found to be damaged with a chunk out of it, ragged and white plaque was evident across the gills. Again, significant adhesions were evident. Pale liver colour (2) and clear ascites was also found. Heart ventricle seemed pale.

F3- Externally, fish possessed eye with sunken and damaged middle, in addition, rubbing was seen on snout. Gills had a ragged appearance. Internally, adhesions present. Liver colour classified as a 4. Pseudofaeces was found.

F4- Haemorraghing was severe on belly. Slight rubbing present on the snout. Gills were found to be ragged with white plaque. Internally, liver was found to be dark (6/7), and again adhesions are present. In addition, pseudofaeces was found.

F5- Externally, scaling was seen. In addition, gills were not as ragged as previous fish, yet white plaques were present. Internally, no abnormal signs were seen.

Case Number:	2021-0336		Site No:	FS1260	Insp:	
Date of Visit	06/10/2021					

		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		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				
Biosecurity	**Number of sites**	**1**	**2 or 3**	**≥ 4**		
Contacts with other sites	Sites operating from single shorebase	0	1	2		0
	Sites sharing staff and equipment	0	1	2		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		12
				Rank		LOW

Case No: 2021-0336 Site No: FS1260

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	Y
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)?	N/A
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?	N/A
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

HDP netting tension nets bird 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?	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: 2021-0336 Site No: FS1260

Date of Visit: 06/10/2021 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 of statement?	
15. Does the FMAg/S identify any requirements for the sensitivity testing of available treatments for sea lice on farms in the area or individual farms?	
16. Does the FMAg/S identify the circumstances under which biological controls and cleaner fish are to be used on farms in the area or individual farms?	
17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?	

Live Fish Movements

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

Harvesting

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

Fallowing

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

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

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

Point of Compliance for Farm Management Agreements Only

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

Management and operation

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

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

Case No: 2021-0336 Date of visit: 06/10/2021

Site No: FS1260 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
INH PCR	0/1	12/10/2021	[redacted]	13/10/2021	[redacted]	05/11/2021	[redacted]	[redacted]
VHS PCR	0/1	12/10/2021		13/10/2021		05/11/2021		
ISA PCR	0/1	12/10/2021		13/10/2021		05/11/2021		
SAV PCR	0/1	12/10/2021		13/10/2021		05/11/2021		
IPN PCR	0/1	12/10/2021		13/10/2021		05/11/2021		
AGD PCR	5/5	13/10/2021		13/10/2021		05/11/2021		
Sal Pox PCR	4/5	13/10/2021		13/10/2021		05/11/2021		
Para Theridion PCR	4/5	13/10/2021		13/10/2021		05/11/2021		
Vibrio sp.	5/5	21/10/2021		27/10/2021		05/11/2021		
Amoebic gill disease histo	3/5	27/10/2021		27/10/2021		05/11/2021		
Gill pathology	5/5	27/10/2021		27/10/2021		05/11/2021		
Epitheliocystis	1/5	27/10/2021		27/10/2021		05/11/2021		
Adhesions	1/5	27/10/2021		27/10/2021		05/11/2021		
Heart pathology	1/5	27/10/2021		27/10/2021		05/11/2021		
Complex gill disease	5/5	27/10/2021		27/10/2021		05/11/2021		
Liver pathology	2/5	27/10/2021		27/10/2021		05/11/2021		

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI, CNI, SLI, VMD	13/10/2021	[redacted]	[redacted]
DIAG	05/11/2021		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0398	**DATE OF VISIT**	06/10/2021
SITE NO	FS1260	**SITE NAME**	Sound of Harris
CASE NO	20210336	**INSPECTOR**	[redacted]

Section 1: Summary

The site was visited following continued reports of elevated mortality levels. During inspection a number of lethargic fish were observed and five fish were removed for further examination and subsequent diagnostic sampling.

Histopathology examination revealed mild multifactorial proliferative gill pathology and evidence of amoebic gill disease (AGD) and epitheliocystis. The samples tested positive to *Neoparamoeba perurans*, confirming the AGD presence. Mild hepatic necrosis was observed in fish 2, as well as chronic splenitis in fish 1.

Due to gill health issues observed on site, samples were also screened for *Paranucleospora theridion* (syn, *Desmozoon lepeophtherii*). Samples tested positive for this pathogen. In addition, four fish tested positive for salmon gill poxvirus.

A *Vibrio sp.* was isolated from all five fish, however the level of purity and growth would not suggest that this bacterium was implicated as a primary pathogen in fish 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

The site was inspected following continued reports of elevated mortality levels and to carry out a routine inspection. Increased mortalities has been attributed to gill health issues and AGD.

Lethargic fish were seen in all pens. Five fish were removed from pen 11 for diagnostic sampling, as this pen had the highest overall mortality and number of observed moribunds during the inspection.

All fish sampled were moribund and lethargic. All gills were found to have a ragged appearance with white plaque observed as well. Fish 1 and 4 had haemorrhaging on the belly.

Internally, adhesions were present in all fish. Fish 1 noted to have a spleen with a rough appearance.

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

Samples

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

Fish number	Pool number	Facility number	Species	Stage	Origin
1,2,3,4,5	1	11	Atlantic salmon	2020 S1 5.57kg	Clachbreac (FS0892)

Results

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

The following bacterium was isolated:

- *Vibrio sp.*
  - 5/5 fish (Gill)

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	18.98	29.26	29.14	29.09	POSITIVE
F2	19.41	25.57	25.66	25.67	POSITIVE
F3	20.23	31.28	31.27	31.19	POSITIVE
F4	18.98	28.73	28.63	28.99	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).

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	18.98	28.85	28.70	28.90	POSITIVE
F2	19.41	27.17	27.40	27.04	POSITIVE
F3	20.23	30.59	30.27	30.50	POSITIVE
F4	18.98	27.10	26.92	27.15	POSITIVE
F5	20.38	34.20	34.03	33.99	POSITIVE

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Website - www.gov.scot/Topics/marine/science

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	18.98	33.69	33.35	34.01	POSITIVE
F2	19.41	32.38	32.38	32.83	POSITIVE
F3					NEGATIVE
F4	18.98	31.45	30.38	31.59	POSITIVE
F5	20.38	36.84	37.05	37.94	POSITIVE

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

Histopathological examination revealed the following:

Gill: Very minimal to mild multifocal hyperplasia and lamellar fusion, some lacunae (some filled with cell debris) observed on the hyperplastic plaques (F1-F5) and some cell debris among gill filaments. F4 also displayed spongiosis features. Some amoeboid cells resembling *Neoparamoeba peruans* (F1, F3-F4) and few basophilic epithelial inclusions (likely epitheliocystis) (F1) were observed. Several aneurysmal dilation observed in all fish.

Skin & Muscle: Within normal range.

Heart: Very small foci of inflammatory cell infiltration (F1), mainly mononuclear cells.

Gut and pyloric caeca: Some fibrous adhesions observed in F3 (potentially associated with vaccine administration).

Pancreas: Within normal range.

Liver: Moderate multifocal hepatic necrosis (F2), very mild diffuse hepatocyte vacuolation (F3).

Kidney: Some scattered glomeruli appeared slight and shrunken (F2).

Spleen: F1 displayed chronic inflammation with fusion of epithelioid cells (macrophages) containing nuclei arranged in a horseshoe-shaped pattern in the cell periphery (multinucleated giant cells). Slightly congested (F4 & F5).

Signed: [redacted] Date: 05/11/2021

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at https://www.gov.scot/publications/fish-health-inspectorate-service-charter/

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

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0398	**DATE OF VISIT**	06/10/2021
SITE NO	FS1260	**SITE NAME**	Sound of Harris
CASE NO	20210336	**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 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 adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Mortality levels had exceeded the reporting criteria since the last inspection and had been reported to the Fish Health Inspectorate as required.

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

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

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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: [redacted] Date: 13/10/2021

Fish Health Inspector

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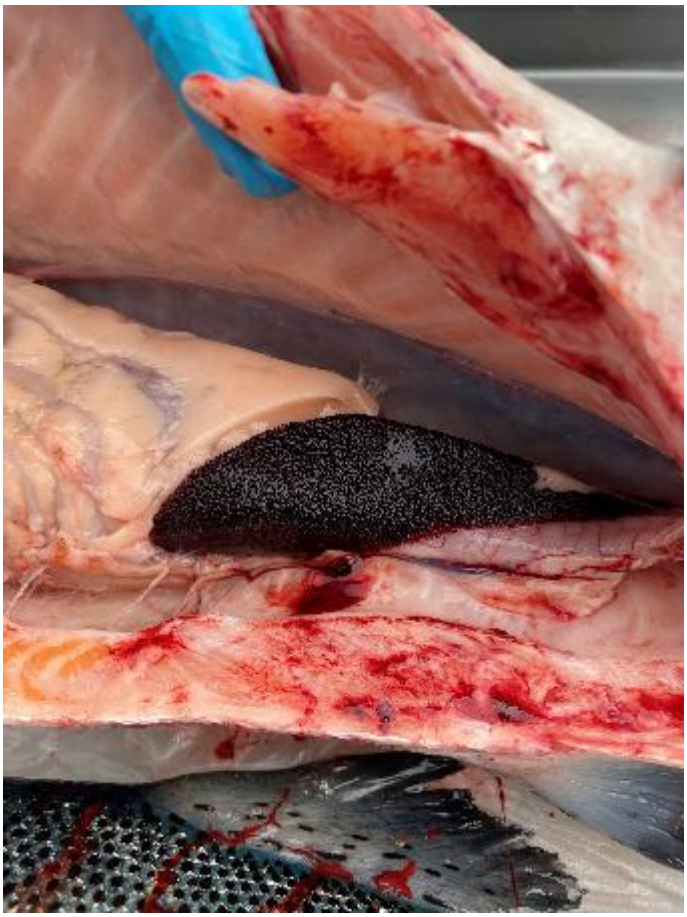

Figure 1 Spleen with tongue-like texture (Fish 1)

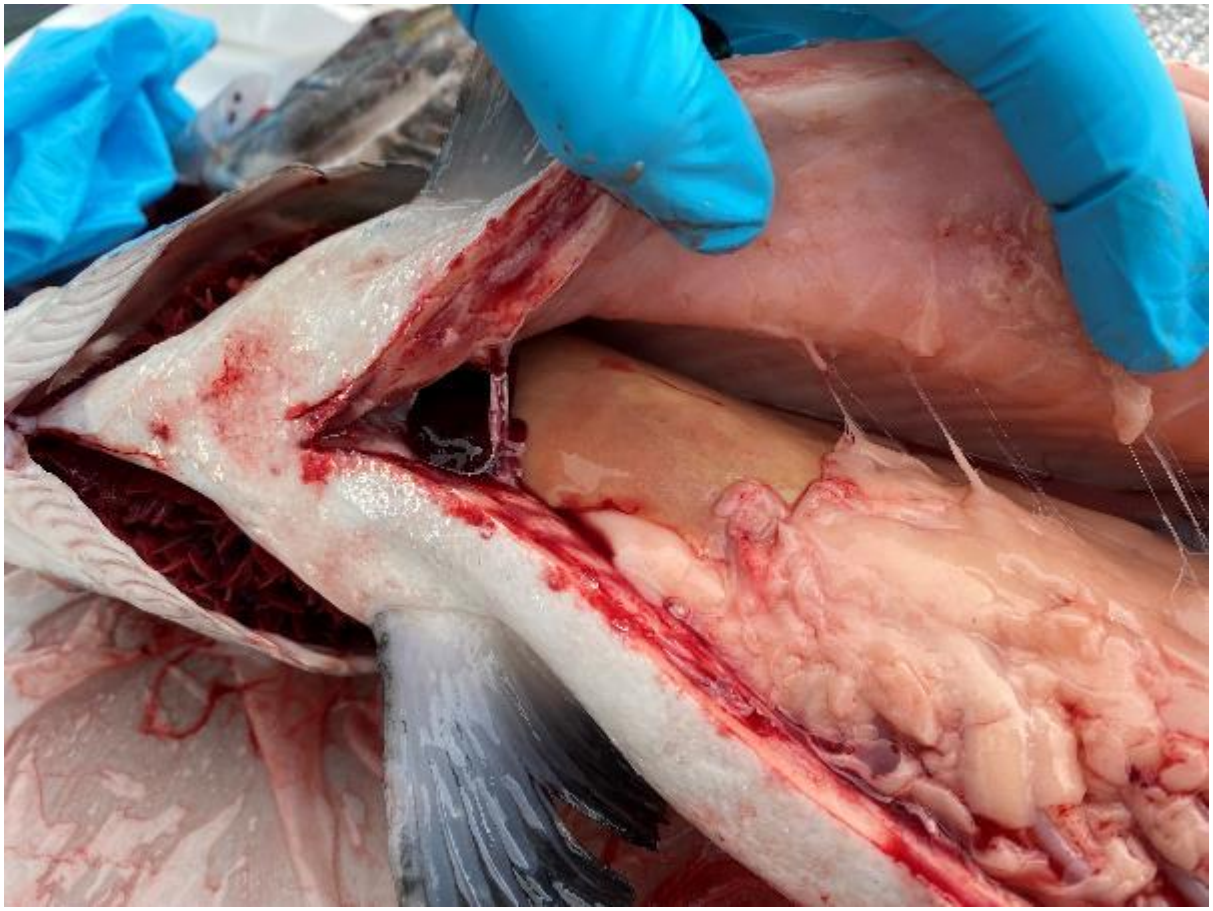

Figure 2 Pale Liver from Fish 2

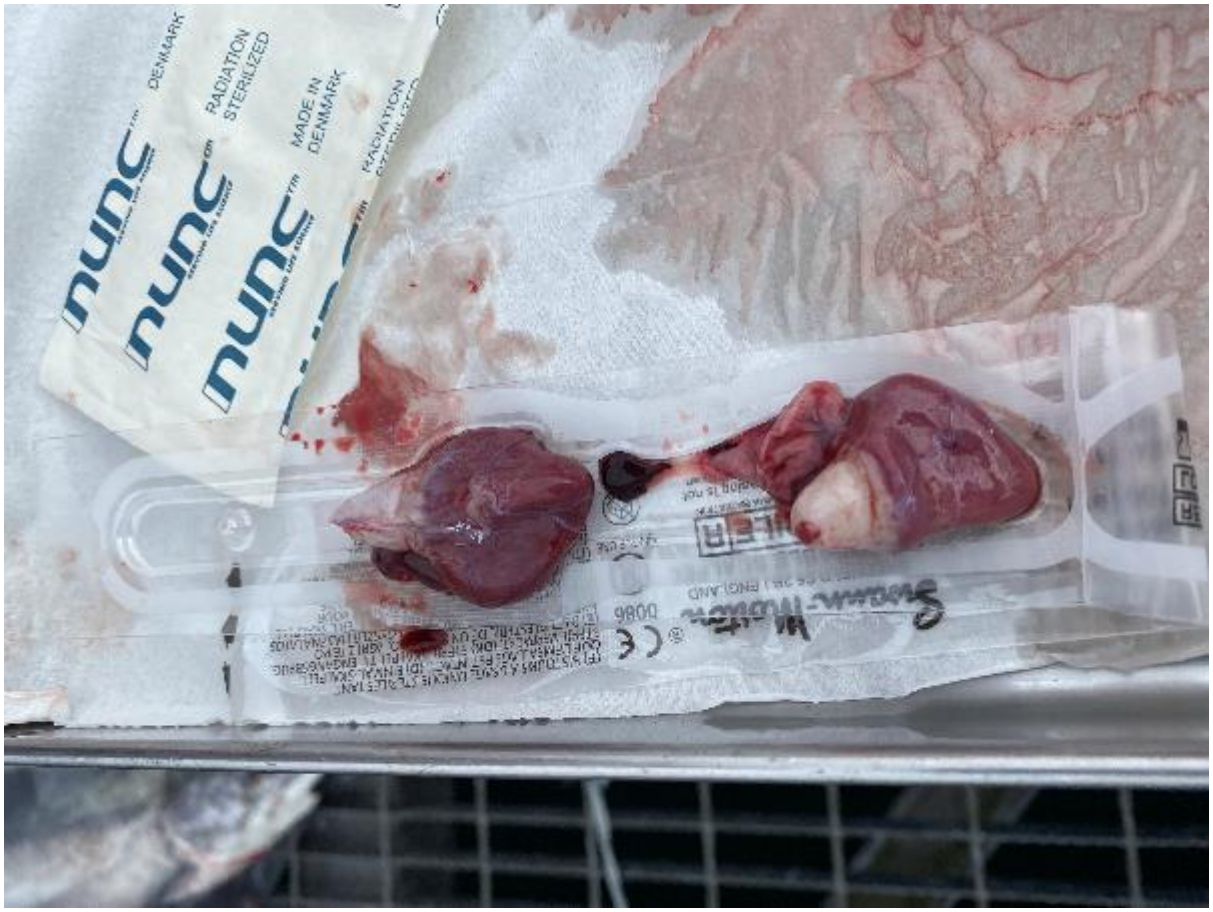

Figure 3 Pale ventricle on thr right from fish 2. Left heart from Fish 1

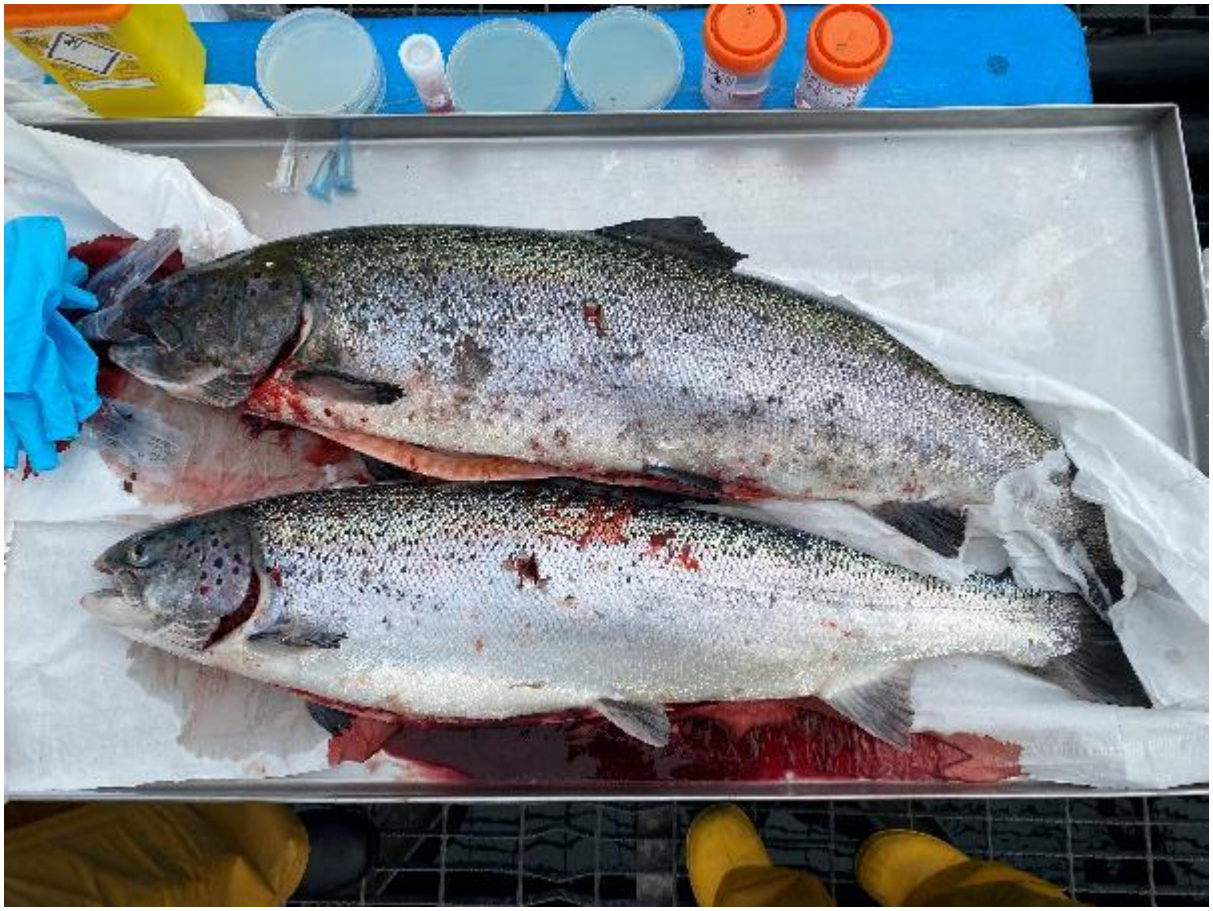

Figure 4 From top- fish 1 and fish 2

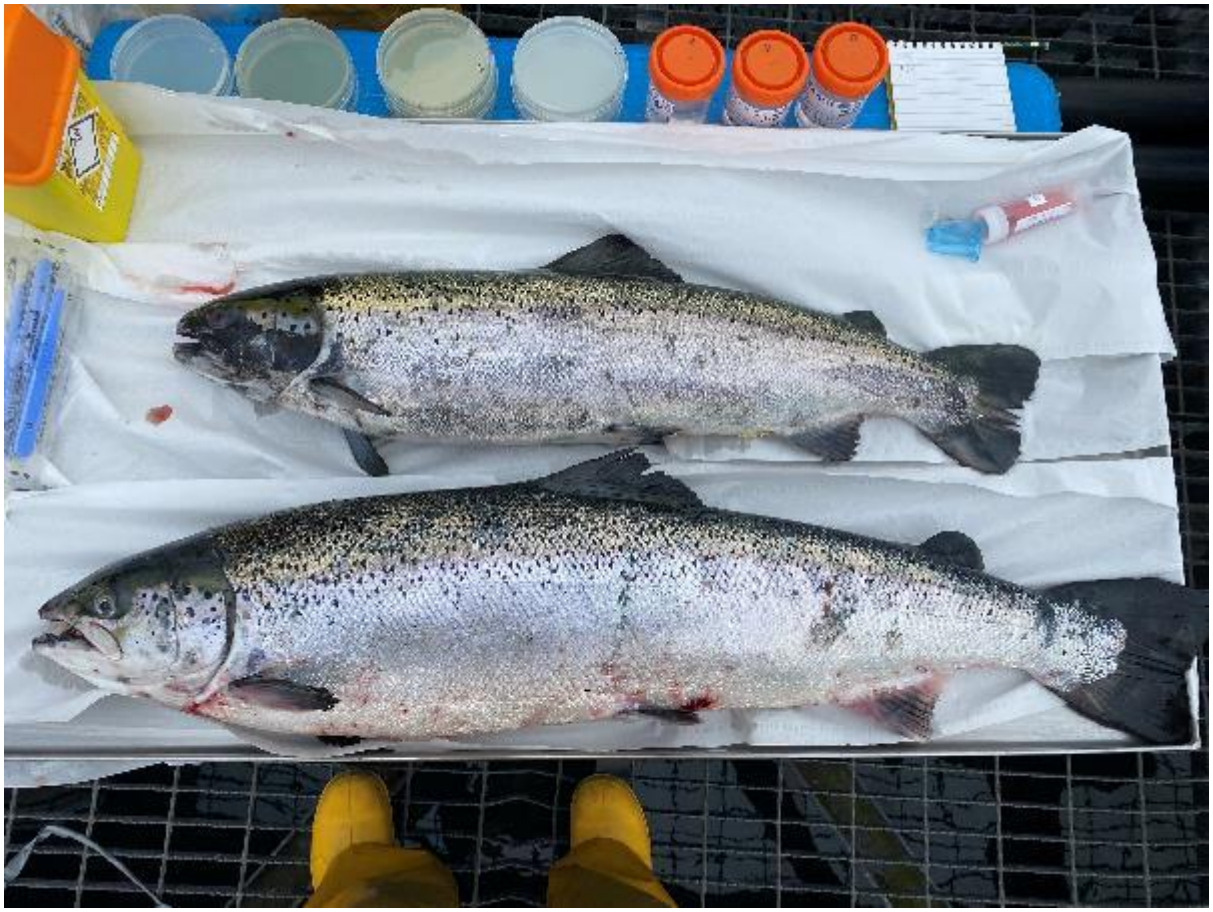

Figure 5 From top- fish 3 and fish 4